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DIAGNOSIS OF INTESTINAL AMEBIASIS *

W. M. JAMES, M.D.
Consultant in Tropical Medicine to the United Fruit Company
PANAMA, R. P.

Intestinal amebiasis due to various degrees of ulceration of the large bowel and rectum following infection with *Endameba histolytica* is a very common ailment throughout those parts of the Caribbean littoral where the United Fruit Company maintains hospitals. A survey of the reports of the medical department of the company for the last ten years shows that the acute phase of this infection, amebic dysentery, is prevalent and very generally distributed; and where this is true there is inevitably a large proportion of infection, which, even though dysentery is not active, produces all manner of symptoms referable to the gastro-intestinal tract, and at times abscess of the liver and even more serious complications. Following a small, and local outbreak of amebic dysentery in 1925, in Santa Marta, Colombia, confined mostly to American employees, a survey was made by Kofoid, Swezy, Boyers and James [1] which uncovered approximately 60 per cent of *Endameba histolytica* infection among the American employees, and a very high percentage of those infected complained of more or less "stomach trouble."

An interesting feature of this survey was that wet fixed and stained preparations (which, hereafter, for convenience, I shall designate as permanent preparations) were made from nearly all stools in which amebas of any type were found, and from stools in suspicious cases. Through the courtesy of Drs. Kofoid and Swezy, I received a nearly complete set of these permanent preparations, and also a list of the observations made in the fresh specimens. It is true that not as much study was given to the fresh as to the permanent preparations, for reasons noted at that time, but it was predicted then that in the permanent preparations a higher percentage of positive results would be obtained than in the fresh.[2] Dr. Kofoid has not as yet published a correlation between these two classes of observation, and it is possible that the relatively limited study of the fresh preparations affects adversely their evidential value. None the less, most of them were carefully gone over by Dr. Kofoid or myself, and at least as much time was devoted to studying them as is usually spent in a routine stool examination. In checking my own results in the fresh specimens against those obtained in the permanent preparations made by Dr. Swezy, and, in some instances, by myself, the increase in positive results for all classes in the latter group was decidedly evident.

Following the International Congress on Medicine in Tropical Medicine in Kingston, Jamaica, in 1924, I made permanent preparations from a series of stools with positive protozoological results, and sent them to various recognized authorities. My intent was to find out whether such authorities would be in substantial agreement, and also to check my own work for errors in interpretation. In all, fifty slides from about forty cases were sent out and data were received from Dr. C. M. Wenyon; Dr. R. W. Hegner (mostly by his technical assistant, Mr. Conrad Bauer); Capt. J. H. St. John and Major P. A. Schule of the U. S. Army Medical School, and Dr. Frank G. Haughwout of the Bureau of Sciences Laboratory, Manila, who went over these last. The fresh preparations corresponding to these slides I had myself subjected to the usual routine examination, of which more will be stated later. It is obviously impossible to have one's observations in fresh preparations checked by competent authority, except under unusually favorable circumstances, and even here, sometimes there will be grounds for difference in interpretation. All of the results, including my own in the fresh preparations, will be sent to Dr. Wenyon for correlation. I can state at this time that, taking the observations in the permanent preparations as criteria, my percentage of error in the examination of fresh specimens, with especial reference to the occurrence of *Endameba histolytica*, was too high for accurate clinical work. There was, however, substantial agreement among all of us as to the finding of *Endameba histolytica* in the permanent preparations, although there were minor and relatively unimportant differences in the identification of the other amebas. That is, they were unimportant from the clinical view, although the protozoologist might not, and probably would not, regard them as such.

In 1923 I had come to the conclusion that, in determining the prevalence of infection with *Endameba histolytica*, the examination of fresh specimens offered many pitfalls to the average observer such as myself.

I am indeed satisfied that under certain specific conditions, among them the almost perfect freshness of the specimen, the thoroughly trained and competent protozoologist can, as Dobell [3] states, differentiate accurately in fresh material between the five species of the intestinal amebas of man. But these are not the conditions of clinical and laboratory work in the tropics,

* From the Medical Service of the Herrick Clinic.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Kofoid, C. A.; Swezy, Olive; and Boyers, L. M.: Fourteenth Annual Report, Medical Department, United Fruit Company, 1925.

2. James, W. M.: Fourteenth Annual Report, Medical Department, United Fruit Company.

3. Dobell, Clifford: Amoebae Living in Man, 1919, p. 12.

and it may be that they do not prevail at home as well, while the qualified protozoologist is rarely found among us. There is other work for him to do, and he is busy doing it. The long record of oversights and misinterpretations, my own among them, and the resulting confusion, due to the earnest and well meant but mistaken efforts of amateur protozoologists to confirm the work of some great investigator, or to bring, as from out of Africa, some new thing in the study of intestinal amebiasis, is ample proof of the difficulty of interpreting the observations and preparations made from unfixed and unstained stool material. Justly, indeed, does Dobell [3] remark: "A present day seeker after the truth, completely ignorant of the subject, would obtain more reliable information by consulting the works published prior to 1900 than those which appeared during the next ten years."

If one works in areas in which *Endameba histolytica* infection is present, and wishes correctly to diagnose and treat the many varieties of "stomach trouble" which constantly present themselves, one must be prepared to recognize amebas in the stools, and to differentiate *Endameba histolytica* from the three other amebas commonly found and frequently associated with it in the same stool; *Endameba coli, Iodameba bütschlii* and *E. nana. Diendameba fragilis* is rarely encountered, but I might record here that I have twice observed it in considerable numbers, and in the fresh specimen both times mistook it for *Endameba histolytica*. Also, there are phases of *Chilomastix, Trichomonas* and one of the smaller flagellates that I have not yet successfully identified, which, in certain stages not infrequently, in fresh as well as in permanent preparations, bear more than a superficial resemblance to *Endameba histolytica*.

The truth is that the finding and correct identification of *Endameba histolytica* in the stools has been no easy task in the past, nor is it such today. The record of errors is voluminous, and I refer not so much to mistakes in biology as to those in the morphologic criteria used as standards of identification.

Prof. Clifford Dobell was detailed by the Medical Research Committee of England, in 1915, to survey patients convalescent after dysentery, which work he later extended. His account [4] of the errors made in examination should be read by every one interested in stool study. Thirty-seven workers accustomed to the use of the microscope, but untrained in protozoology, began this study under the direction and training of himself and Dr. A. C. Stevenson. What happened is best stated in his own words:

> The errors committed by an examiner with little or no previous experience are such as I could not have believed possible, if I had not actually encountered them; and in cases where the health of a patient is at stake, it is, I believe, almost better that no examination at all should be made than that it should be made by an incompetent or inexperienced person. . . .

Boeck and Stiles [5] state in their series that the chances of not finding cysts in known histolytica infections were 2 to 1 at any one examination, but that these figures must be accepted with reserve, for it not infrequently occurs that cysts are not found until the fourth, fifth, sixth and xth examination.

As has been stated, it is obvious that there must be a certain amount of intestinal amebiasis generally distributed in temperate climates. Recent surveys indicate a prevalence between 5 and 10 per cent in those examined in the United States and England. The symptomatology was discussed by James and Deeks [6] and is readily accessible. A peculiarity of gastro-intestinal trouble due to histolytica infection is that it is chronic, and yields only temporarily and infrequently to dietetic and simple remedial measures. This infection frequently impairs materially the usefulness and efficiency of the patient, although his general health may be but little affected. Continued gastro-intestinal discomfort leads to neurasthenia, in many cases with resulting mental irritability and loss of concentration. When accompanied by long continued loss of weight it results in advanced gastro-enteroptosis, with all manner of unpleasant symptoms, a condition frequently seen in the Herrick Clinic at Panama, and one requiring much time and patience in its treatment. It is hoped, then, that any suggestions leading to facility and correctness in diagnosis may be helpful.

Survey figures show that one examination uncovers about one third of the actual number of histolytica infections present in a given community; three examinations, between one half and two thirds, and six examinations up to about 90 per cent; an indefinite number of examinations may be required before the remaining 10 per cent of infection is found.

But it should be remembered that survey examinations are for the most part made on old stools and are not checked, as a rule, by permanent preparations. That is, the determination is made by finding only cysts in unstained or iodine treated preparations. None of the survey figures show what the results would have been had reasonably fresh material been used, and this checked against permanent preparations. My own figures to date show that in about one half of my histolytica infections, excluding acute dysentery, only vegetative forms are found at any one examination, and these would have been lost in survey work. Further, as has been noted, there is in suspected cases an indeterminate, as yet, but very definite increase in positive observations in permanent preparations over those in unstained material, whether fresh or old. Also, in infected districts such as the Caribbean littoral, there will be a much higher percentage of positive observations than in any group in the United States and Europe. In Santa Marta not only was there an extraordinary incidence of histolytica infection, but the individual infections themselves were heavier than with those seen in the Herrick Clinic in Panama, where patients come from all over Central and northern South America—hotbeds of amebic infection.

By using reasonably fresh material, and by the study of permanent preparations made from this, I believe that in trained hands the percentage of positive observations in amebiasis (not amebic dysentery) can be raised on the first examination from the survey figures of 33 per cent to at least 75 per cent. This is due to the finding of vegetative forms which are lost in survey work. Thus the chance of a positive diagnosis on the first examination is raised from one in three to three in four. From my experience in my own work, I would say that 60 per cent of my histolytica infections have been found on the first examination of fresh material, and about 75 per cent when this has been

4. Dobell, Clifford: Amoebic Dysentery and the Protozoological Investigation of Cases and Carriers, Medical Research Committee, 1917, p. 7.

5. Boeck, W. C., and Stiles, C. W.: Studies on Various Intestinal Parasites (Especially Amebae) of Man, Bull. 133, Hyg. Lab., U. S. P. H. S., 1923.

6. James and Deeks: The Etiology, Symptomatology and Treatment of Intestinal Amoebiasis, International Conference on Health Problems in Tropical America, 1924.

combined with permanent preparations, which is more than twice as much as the survey figures show. The second examination, when the first has been negative, has increased this to 90 per cent of positive results.

To date, in the study of permanent preparations from some 250 patients, it has seldom been necessary for me to go beyond the third examination. By this I mean that if the third examination has not uncovered a positive histolytica infection, I have not found it in the fourth to the sixth or seventh examinations, except very rarely.

I have also made a series of control smears from apparently normal patients. When these were negative in the first three examinations, I did not find *Endameba histolytica* or other amebas subsequently. It is, however, truly remarkable to see the variations in the number of amebas that occur not only in histolytica infections but in those with the other species as well. On one day the amebas will occur in great numbers and are easily found. On another day they will be uncovered only by a prolonged search in permanent preparations, and the fresh specimen will often be entirely negative.

It is of importance to select as nearly as possible material which will show the maximum amount of infection in any given case. The correct diagnosis of histolytica infection is not a mere routine laboratory procedure. It requires training, and not only training but patience, and a reasonable degree of skill in the proper manipulation of the microscope. Many a laboratory man who, because he has used the instrument as one of the working tools of his profession for years, and has come to fancy himself rather skilful in handling it, has been astonished to find the superior images obtained with his own lenses by another who really knows how to use them. I do not write here of the refinements of the art of microscopy, but of the intelligent use of its elementary principles.

Textbooks are useful, indeed indispensable, and the references given will be of value to the student.[7] But as in many other fields, experience is the best teacher. The observations in fresh preparations must be checked against those in permanent ones, until the student is satisfied that his interpretations of the former are reasonably correct, and I do not know of any other method of value for him, except personal instruction from a known authority. My own experience has been that errors in teaching and learning are far more frequent when this is omitted, and dependence is placed on examination of fresh material. Type slides of permanent preparations are useful enough for comparison with similar material, but they cannot take the place of the study of fresh material checked against fixed and stained smears made at the same time. Undoubtedly the preparation of the smears is troublesome and takes time, but it is no more difficult than routine histologic and pathologic work of other kinds. It is not a problem here of the trouble it takes; it is in the United States, as well as in tropical countries, one of a correct diagnosis of a common and often chronic disease of the large intestine with protean symptomatology, and Dobell is correct when he states that if it cannot be made properly, it should not be made at all.

To go into the technic of making permanent preparations is outside the scope of this paper. For similar reasons no description of the amebas is given, nor is any attempt made to differentiate between them, since this information is given at length in the textbooks referred to. There is an old saying "All signs fail in dry weather," and frequently in fresh preparations, and some times in permanent ones, the precystic stages of *Endameba coli* and *Endameba histolytica* cannot be differentiated with certainty. In fresh specimens *Iodameba bütschlii, Endameba coli* and *Endameba histolytica* are often mistaken one for the other, and small *Endameba nana* and *Endameba histolytica* organisms are very similar indeed. There is one of the smaller flagellates that, in permanent preparations, is morphologically almost identical with the smallest type of vegetative *Endameba histolytica,* in nuclear as well as in cytoplasmic structure.

Various methods of obtaining suitable stool material have been recommended. Kofoid advocates the use of bile salts or of oxgall, and this does gove good results. In my opinion a mild laxative will answer in most cases. The object is to obtain a soft stool, without purgation, since it is very difficult to make permanent preparations from liquid stools. Encystment of the amebas does have some relation to formed stools, but only when the organisms are in that stage of their life cycle at which encystment is about to ensue. Usually I give two or three laxative pills about 11 or 12 at night, so that when the patient brings the stool in the morning it is fairly fresh. A stool that contains material from high up in the bowel, as well as from lower down, is the best material; and, when the material is formed, soft and liquid, the patient should be instructed to bring a sample of each portion.

If the first examination is negative, either for any amebas in general, or for *Endameba histolytica* in particular, it is always better, when possible, to wait two or three days before giving another laxative. As has been stated, the number of amebas found at any given examination varies widely, and it is my experience that the largest amount is most frequently obtained with a mild laxative following one or two days of constipation.

It may be possible, in places where the staff is not equipped for the work or familiar with the technic, to prepare permanent slides for examination elsewhere. This is done by fixing them for ten minutes in Schaudinn's fluid: saturated solution of mercuric chloride in physiologic sodium chloride solution, 65 cc.; ethyl alcohol 95 per cent, 35 cc.; glacial acetic acid, from 3 to 5 cc. This solution, if kept tightly stoppered, may be used many times, as Dobell has pointed out.

The material is painted thinly on the lower end of the slides with a camel's hair brush or some cotton wrapped around a match or toothpick, and the slides are quickly placed in a Koplin staining jar containing the fixative. This must be done rapidly and the material not allowed to dry even slightly. After ten minutes the slides are transferred to 70 per cent ethyl alcohol, and after ten minutes more, to 95 per cent ethyl alcohol. After hardening in this last over night, they are placed one by one in a wide mouthed glass containing 70 per cent alcohol. As each slide is placed in the glass, a continuous piece of string is wrapped around its upper end, and the next slide placed in position, and wrapped

7. In addition to the references already given, the student may consult:
Craig, C. F.: Manual of the Parasitic Protozoa of Man, Philadelphia, J. B. Lippincott Company, 1923.
Dobell, Clifford: A Study of 1,300 Convalescent Cases of Dysentery from Home Hospitals, Medical Research Committee, 1918.
Dobell, Clifford, and O'Connor, F. W.: The Intestinal Protozoa of Man, New York, 1921.
Hegner, R. W., and Taliaferro, W. H.: Human Protozoology, New York, Macmillan Company, 1924.
Wenyon, C. M.: Protozoology: A Manual for Medical Men, Veterinarians and Zoologists, New York, William Wood & Company, 1926.

to the preceding one, so that a bundle of five or six slides are wound together tightly at the tops, with string between each slide, and with the bottoms free. This will keep the slides separated. If they are placed in a container without being separated they will adhere, and the material will rub off later. Cover glasses are an unmitigated nuisance and should be used only by those who prefer them. After the bundle of slides is prepared, it is placed in a leak proof container filled with 75 per cent ethyl alcohol. The container is sealed with wax or paraffin, carefully packed in cotton or excelsior, placed in a wooden box, and forwarded to its destination, where the rest of the work can be done. I learned this method from Dr. Kofoid, and it is the best one I know for the transportation of wet fixed material.

It must ever be borne in mind that the smears cannot be allowed even the slightest touch of drying; otherwise the nuclei of the amebas are so distorted and broken up that identification is impossible.

ABSTRACT OF DISCUSSION

Dr. Frank Smithies, Chicago: In this country our problem has not to do so much with endamebiasis as it has to do with eliminating the idea that many things which are called endamebiasis are not endamebiasis at all. I have found about ninety-six cases of endamebiasis in the examination of 3,758 patients with alimentary tract disturbances. One must, in chronic disease of the colon, irrespective of where the patient lives, suspect the possibility of some protozoic infestation. The patient is put on a two-day preliminary dietetic and medicinal regimen. The preliminary diet is usually a very soft or fluid diet leaving little colon residue. During this period, the patient is thoroughly saturated with atropine or belladonna in order that colon ulcers or diverticula may relax, and thus discharge their surface contents into the intestinal canal. In the actual collection of the specimens, I use a purgative and employ magnesium citrate solutions. I wish to protest against the attempts at diagnosis of intestinal endamebiasis through the proctoscope, as the textbooks advise, by picking a bit of mucus from the lining of the rectum or the sigmoid. When an infestation has passed that far down, one is not making an early diagnosis of endamebiasis; above the low colon lesions there is extensive pathologic change. The examination of specimens in our clinic is facilitated by having all the stools passed in the laboratories examined immediately for vegetative forms; then preparations are made for cysts and permanent study. I think that our figures regarding the number of times we have to examine before we find the protozoa are rather higher than those of Dr. James. We have had instances in which patients were ill several weeks, and in which from four to eight stools a day were examined before we demonstrated the protozoon. There is the possibility of endamebiasis without dysentery and without endameba in the stools. In such instances, a systemic scattering of the organism and scarring of the mucosal surface of the colon may have taken place; there is no ulceration, yet nests of organisms lie in the deeper tissue. We have demonstrated encysted and vegetative protozoa in the biliary tract and gallbladder by duodenal drainage. In three instances, at operation, we have recovered the protozoa which we had seen in duodenal extracts before operation from the gallbladder. One must not forget that endamebiasis necessarily does not mean "amebic dysentery."

Dr. Kenneth M. Lynch, Charleston, S. C.: With most of us, when intestinal amebiasis is mentioned, we immediately have in mind a tropical disease, or, at least, a disease of the South in which there is dysentery. The typical form, and the one with which we are most concerned in the temperate zone, is a chronic amebiasis without dysentery. To make a diagnosis in such a case, it is necessary to identify in the stool the specific ameba which causes the disease. Dr. James has told us how to identify that ameba. His method is a far cry from the way in which the identification of that ameba is usually attempted. Usually a saline purge is given to produce a watery stool purposely and search is made for the active vegetative forms of the ameba on which a diagnosis is made. This method is responsible for perhaps the large percentage or the apparently growing prevalence of intestinal amebiasis in this country. There has been a mistaken diagnosis, a mistaken identification of harmless amebas for *E. histolytica*, because of the fact that it is produced in a stage in which most workers cannot identify it. Dr. James gives some mild laxative. That is a good thing to do when there is constipation. In many cases it is not particularly necessary; it is just as well, perhaps, to have the ordinary formed stool and to look for the cysts. That is a thing that I want particularly to impress, that except when the patient is in the hands of an expert, the intestinal amebas, particularly *E. histolytica* and *E. coli*, cannot always be differentiated in active form. Sometimes even the expert will make a mistake. Several years ago I encountered a spontaneous amebic colitis in the rat. I was very much pleased to see the specimens which Dr. James has shown of the human intestine as a possible further connection between the similar condition in the rat and human amebiasis.

Dr. W. M. James, Panama, R. P.: It is not necessary to give a laxative to obtain a soft stool for diagnostic purposes if the patient has diarrhea or dysentery; and if he has true amebic dysentery or diarrhea, with a little practice one is almost certain to find amebas. The disappearance of other intestinal protozoa in acute dysentery is worthy of note. I have had patients with unquestionable mixed infections of *E. coli*, *E. histolytica* and *I. bütschlii*, and sometimes all three organisms could be found in one field. At times, some of the intestinal flagellata would be present also, but during an attack of relapse of acute or subacute dysentery, the other protozoa would all disappear, so that if one finds a large actively motile ameba in acute or subacute dysentery, this is practically certain to be *E. histolytica*. Ten years ago, before *I. bütschlii* and *E. nana* had been identified, I knew all about the ameba. These two species must have passed in review under my microscope many thousands of times, and I must have mistaken them in permanent as well as in fresh preparations for *E. histolytica* and *E. coli*. I did not identify them. I do not feel so bad about it when I remember the qualified protozoologists who did not identify *I. bütschlii* and *E. nana* either. But the fact is that many persons who see these small amebas every day identify them as *E. histolytica* or *E. coli*, and, as far as I am concerned, I believe that most of them are mistakenly called *E. histolytica*. I must have treated many patients for amebiasis, with inflammation of the large bowel, who did not have *E. histolytica* at all. As a result of that, about three years ago I started to find out just how often I did make mistakes in fresh stool diagnoses, and I found that I did so in just about 20 per cent of the cases. Even today I write down my identification of small amebas found in large numbers in a stool in the fresh examination as *E. histolytica* or as *I. bütschlii*, and then when the permanent preparation comes through, I find that I have mistaken one for the other. If some one were to make a diagnosis of *E. histolytica* infection on me, I should want a fixed and stained specimen so that I might look at it and see it for myself.

War a Moral Menace.—Living, breathing, thinking this atmosphere of hate, rapine, vengeance, there must follow a psychological reflex whose moral tone is conducive to the lowest standards—decidedly immoral. No one has ever judged that the life of the soldier in time of peace is conducive to highest morals. Only where he has sufficient work to keep him busy is it possible for him to control the human passion. A large standing army, except in time of war, is necessarily idle much of the time. The result of this is the same whether in soldier or in civilian—a letting down of the inhibition necessary to the best interests of society. A community is inclined to suffer morally from the presence of idle troops no matter how fine a body of men these may have been in their private lives outside the army.—Jones: Hygiene and War, p. 131.

HEART DISEASE AS SEEN IN A SOUTHERN CLINIC

A CLINICAL AND PATHOLOGIC SURVEY *

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[EDITORIAL NOTE.—This paper concludes the symposium on heart disease. In our last issue we published the papers of Dr. Pepper and of Drs. Phillips and Anderson.]

In the consideration of heart disease, which in one form or another is responsible for approximately one fifth of the adult deaths in the United States, it is important that data be obtained from different sections of the country for study and comparison, because it is conceivable that climatic, racial and perhaps other differences in widely separated portions of the United States might considerably vary the incidence of some of the causal agencies in heart disease, and therefore heart disease itself.

Faulkner and White [1] showed that acute rheumatic fever was decidedly less frequent in mild and warm climates than in those in which damp and cold prevailed, and Harrison and Levine [2] have pointed out the rarity of rheumatic heart disease in the southern part of this country. Wood, Jones and Kimbrough,[3] in a series of 623 cases of heart disease, about equally divided between Massachusetts and Virginia, found that rheumatic heart disease was less commonly seen in the latter (22 per cent in Virginia to 39.8 per cent in Massachusetts). Cabot,[4] in two analyses of cases occurring in New England, has presented clearly the percentage of the different types occurring in that section of the United States.

In addition, it is especially desirable to have as full an understanding of the etiologic factors producing heart disease as is possible, because a large number of cases are secondary to infections, and are therefore to some extent preventable, while in a great many other instances the heart suffers secondarily to some extracardiac disturbance, such as hypertension or arteriosclerosis, and a better knowledge of these types of heart disease is greatly needed. Also, it is of some moment that physicians should be familiar with the relative frequency of the more common varieties of heart disease in different sections of the country.

With these facts in mind, and because so far as we know there has not been a similar study made in a subtropical clinic, it was decided to make a clinical and pathologic survey of the cardiac cases seen at the John Sealy Hospital during the last seven years.

MATERIAL STUDIED

The material from which this study was made comprised all the definite cases of structural heart disease admitted to all services of the hospital from Jan. 1, 1920, to Dec. 31, 1926, inclusive. During this time the total number of hospital admissions was 25,816; 17,670 were white persons and 8,146 were negroes, a ratio of whites to negroes of 2.2 to 1. Of these patients 915 presented definite evidence of heart disease, and of these 501 were white, and 414 were negroes, which shows that heart disease is 1.8 times more common in the negro race than in the white. These figures do not include doubtful or suspicious cases of heart disease, functional cardiac diseases, simple arrhythmias without any other evidence of heart disease, or those with systolic murmurs alone. Only structural disease of the heart was considered. The patients were fully studied by means of the history, the physical examination, laboratory methods, and many by the roentgen ray and electrocardiograph; and 210 came to autopsy.

CLASSIFICATION

As far as possible, all cases were classified according to etiology, as was suggested by Cabot,[4] White and Myers,[5] and others. This was most useful for the purposes of this survey, and it permits an easy comparison with similar series of cases reported from other sources.

TABLE 1.—*Frequency of Heart Disease in Various Etiologic Groups*

Type	Number of Cases	Per Cent	White		Negro	
			Male	Female	Male	Female
Hypertensive	436	47.7	146	81	128	81
Syphilitic	177	19.3	41	5	103	28
Arteriosclerotic	125	13.7	74	25	21	5
Rheumatic	67	7.3	28	24	5	10
Angina pectoris	21	2.3	15	6	0	0
Subacute bacterial endocarditis	14	1.5	6	3	4	1
Thyrotoxic	12	1.3	1	6	3	2
Congenital	6	0.7	2	3	0	1
Miscellaneous	12	1.3	4	3	3	2
Unclassified	45	4.9	18	10	9	8
Total	915	100.0	335	166	276	138

Of the 915 patients with heart disease (table 1), 436 (47.7 per cent) were hypertensive; 177 (19.3 per cent) were syphilitic; 125 (13.7 per cent) were arteriosclerotic; sixty-seven (7.3 per cent) were rheumatic; twenty-one (2.3 per cent) had angina pectoris; fourteen (1.5 per cent) showed subacute bacterial endocarditis; twelve (1.3 per cent) were thyrotoxic; six (0.7 per cent) had congenital heart disease; forty-five (4.9 per cent) were impossible of classification, and twelve (1.3 per cent) were grouped under the heading "miscellaneous." The latter were largely cases of acute endocarditis, and acute and chronic pericarditis, which could not be classified according to etiology. Thus it is seen that here, as elsewhere, the majority of all cases of heart disease fall under one of the four main groups; viz., hypertensive, syphilitic, arteriosclerotic and rheumatic. In this series the total for these groups is 805, or 88 per cent, and of this number 436 (54.2 per cent) were cases of hypertensive heart disease, the most important numerically of all types.

HYPERTENSIVE HEART DISEASE

Further study of the 436 patients with hypertensive heart disease showed that 274 were males and 162 were females. There was no striking difference in this series between the number of whites and negroes with this type of heart disease, but since the incidence of heart disease in the negro is practically double that in the

* From the Department of Internal Medicine, University of Texas School of Medicine.

* Read before the Section on Practice of Medicine at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Faulkner, J. M., and White, P. D.: Incidence of Rheumatic Fever, Chorea and Rheumatic Heart Disease with Especial Reference to Its Occurrence in Families, J. A. M. A. **83**: 425-426 (Dec. 27) 1924.

2. Harrison, T. R., and Levine, S. A.: Regional Distribution of Rheumatic Fever and Rheumatic Heart Disease in the United States, Southern M. J. **17**: 914-915 (Dec.) 1924.

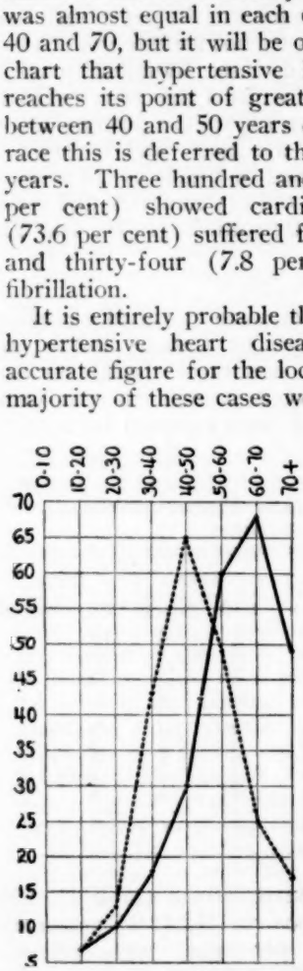
3. Wood, J. E., Jr.; Jones, T. D., and Kimbrough, R. D.: Etiology of Heart Disease, Am. J. M. Sc. **172**: 185-194 (Aug.) 1926.

4. Cabot, R. C.: Physical Diagnosis, New York, William Wood & Co., 1919; Facts on the Heart, Philadelphia, W. B. Saunders Company, 1926.

5. White, P. D., and Myers, M. M.: Classification of Cardiac Diagnosis with Especial Reference to Etiology, Am. Heart J. **1**: 87-95 (Oct.) 1925.

white race, it follows that hypertensive heart disease is twice as frequent among the negroes. Seventeen (3.9 per cent) of our patients were under 30 years of age; fifty-six (12.8) were between 30 and 40; 297 (68.1) were between 40 and 70, while sixty-six (15.1 per cent) survived the seventieth year. The relative frequency was almost equal in each of the three decades between 40 and 70, but it will be observed in the accompanying chart that hypertensive heart disease in the negro reaches its point of greatest frequency in the decade between 40 and 50 years of age, whereas in the white race this is deferred to the decade between 60 and 70 years. Three hundred and seventy-nine patients (86.9 per cent) showed cardiac enlargement, while 321 (73.6 per cent) suffered from congestive heart failure, and thirty-four (7.8 per cent) developed auricular fibrillation.

It is entirely probable that such a high percentage of hypertensive heart disease does not represent an accurate figure for the locality as a whole, because the majority of these cases were in people who performed hard manual labor, and in such persons hypertension is unusually frequent. It is also likely that a large proportion of the forty-five cases grouped as "unclassified" really belong in the hypertensive group, but because they were seen so late along in the course of the disease, exact classification was impossible, so that as far as the hospital figures go the number is slightly too low. Also, as will be shown later, twelve of the cases of angina pectoris in this series were founded on a hypertensive basis. Hypertensive heart disease occurred in 125 patients who also had syphilis, as determined by the history and the Wassermann reaction, but in whom evidence of syphilitic heart disease was not present. Most probably some of these will later on develop into typical examples of the latter, but for the present they must be placed with the hypertensive group. Not alone in the clinic was this condition found, but also at autopsy the pathologist showed the greatly enlarged heart without valve defects, so characteristic of hypertensive heart disease, with a typical syphilitic aortitis. We have designated these cases "hypertensive heart disease with syphilis," and they will be observed with interest during the coming years. In three aortic insufficiency has already developed, and the classification has had to be changed from the hypertensive to the syphilitic group. Strictly speaking, these cases are combinations of the two types.



Frequency of hypertensive heart disease in white persons and in negroes; solid line, white persons; broken line, negroes.

SYPHILITIC HEART DISEASE

In the group of cases of syphilitic heart disease were considered patients who had aortic valvulitis of syphilitic origin, which together with the very large heart seen in this type of heart disease constitutes the classic picture of this form. Syphilitic aortitis and aortic aneurysm were also included in this group, but only when these conditions were found associated with definite cardiac abnormality for which no other etiologic factor could be assigned.

Of the 177 cases of syphilitic heart disease, 103 (58.8 per cent) were in negro males, as against forty-one (23.1 per cent) in white males, a total of 144 males to only thirty-three females. In the latter, the disease was much more frequent in the negro race, only five white females being in this group. Syphilitic heart disease is therefore about four and a third times more common in males than in females, and in females it is about six and a half times more frequent in negroes than in whites, while in the males it is about three times more common in the negro. This is not due altogether to a higher incidence of syphilis among the negroes, because McNeil,[6] working in this clinic, showed that syphilis was found in almost the same ratio in whites and negroes of the same social scale admitted to the hospital; viz., about 25 to 30 per cent.

Apparently, then, the cardiovascular apparatus of the negro is more susceptible to syphilitic infection than that of his white brother. The negro males in this series were almost exclusively those who did very hard manual labor, working in cotton or on the wharves, and it is this fact plus syphilis, together with perhaps a lowered resistance, which accounts for the high ratio of syphilitic heart disease among them. The largest number of these cases for any 10 year age group was between 40 and 50 years, then between 30 and 40 years, and next between 50 and 60 years (table 2). Before 30 and after 60 this type of heart disease is relatively uncommon. In addition to syphilitic heart disease, aneurysm of the aorta was found in thirty-five (19.8 per cent) of these cases. One hundred and fifty-four (87 per cent) of the 177 had greatly enlarged hearts, and 109 (61.5 per cent) were seen in congestive heart failure. An interesting observation among these patients was that only six (3.4 per cent) had auricular fibrillation.

Effort was made to ascertain how many of these cases presented clinical evidences of syphilis, other than the heart disease, by means of the history and Wassermann reaction. Ninety-one gave a positive Wassermann reaction, and eighty-one gave a positive history, while both history and Wassermann reaction were positive in forty-four instances. There were thirty-seven instances of a positive history with a negative Wassermann reaction in the blood, in some instances, at least, the result of treatment previously given. Forty-six cases which had been diagnosed syphilitic heart disease were studied at autopsy, and all showed anatomic evidence of syphilis, usually an aortitis, aortic valvulitis, or an extension of the aortitis to the openings of the coronary arteries. Of these cases studied at autopsy, there had been both a negative history and a negative blood Wassermann reaction in sixteen, while this was observed in twenty-three of the clinical cases. In 600 cases of heart disease studied by Cabot, 12 per cent were syphilitic as against our 19.3 per cent, and in his late book this author reports only ninety-two or 6.6 per cent syphilitic cases out of 1,393 autopsies in cardiac cases. Again, in comparison with our 19.3 per cent of syphilitic heart disease, Wood, Jones and Kimbrough [3] give for this type 11 per cent from Virginia, and 6.8 per cent from Massachusetts. These differences are explained on the basis of the large number of negroes in the present study.

6. McNeil, H. L.: Syphilis in the Southern Negro, J. A. M. A. 67: 1001-1004 (Sept. 30) 1916.

ARTERIOSCLEROTIC HEART DISEASE

Arteriosclerotic heart disease occurred 125 times, or 13.7 per cent, and was the third largest group of the series. Here, again, the males furnished the largest number of cases, ninety-five, or 76 per cent, of which seventy-four were white and twenty-one were negroes; of the females, thirty in all, twenty-five (83.3 per cent) were white women. It can be seen that while syphilitic heart disease is very much more frequent in negroes than in whites, arteriosclerotic heart disease is found four times less often in the negro. The reason for this is not very clear, since the frequency of arteriosclerosis in advanced degree among the negroes is too well known to require comment. The large ratio of males to females with arteriosclerotic heart disease (3.5 to 1) is probably due to habits and occupational causes which favor the development of arteriosclerosis among the men. The large majority of cases of this type of heart disease occurs in persons past 60 years of age, 100 cases, or 80 per cent, being found in this study; it very rarely occurs under 50, and begins to assume importance only between 50 and 60. Compared with hypertensive heart disease, the arteriosclerotic form reaches its peak from the standpoint of frequency after 70 years of age, whereas in the former it is most frequent between 40 and 60 years. Characteristically, the heart in this form of heart disease is less often enlarged than in the other groups, the condition being noted in only seventy-three, or 58.4 per cent in this series, and the enlargement when present is usually less in amount.

Relative murmurs were common, and heart failure of the congestive type occurred in sixty-nine (55.2 per cent) of our cases. Clinically, this form is often grouped with the hypertensive type, and at times in far advanced cases of either hypertensive or arteriosclerotic heart disease it may be extremely difficult or even impossible to tell which factor originally caused the heart disease. Auricular fibrillation was found to occur more often in arteriosclerotic heart disease than in the hypertensive or syphilitic forms, it having been noted in seventeen of the 125 cases, or in 13.6 per cent. The blood pressure in this group was normal, or nearly so, and patients who had very high pressures were recorded among the hypertensive, even though they showed arteriosclerosis as well. Doubtless many of our arteriosclerotic patients with normal pressures had at some time been also hypertensive, but they came under observation during the terminal stage of their disease with advanced myocardial failure, and perhaps thereby a blood pressure much lower than it had formerly been. The percentage of heart disease due to arteriosclerosis in this survey was practically the same as that given for Virginia by Wood, Jones and Kimbrough,[3] and by Cabot [4] for New England.

RHEUMATIC HEART DISEASE

The low incidence of acute rheumatic fever in the South is well known, as has already been indicated. In the seven years during which the entire series of heart cases were admitted to the hospital, there were only ten cases of acute rheumatic fever and nine cases of chorea in the same clinic, or 0.33 per cent of the total number of medical admissions to the hospital. In view of this small number of cases of acute rheumatic fever, it is somewhat surprising that we found as many as sixty-seven, or 7.3 per cent, of our heart cases belonging to the rheumatic heart disease group. As will be shown later, five of the cases of subacute bacterial endocarditis were primarily rheumatic heart disease, and if we add these to the sixty-seven we would then have 7.9 per cent under this classification. Nevertheless, the comparison of the incidence here with that of twenty-two per cent for Virginia and from 40 to 46 per cent for New England is striking. A person living in this locality is three times less likely to develop rheumatic heart disease than if he lived in Virginia, and six times less likely than if his residence was in New England. In this connection it is interesting to note that thirty-two patients of the sixty-seven were not native born Texans, and that seventeen came from Northern or Eastern states or Europe, although the records do not show in many instances where the patient resided at the time his rheumatic infection occurred. In other words, if it were possible to determine the locality in which rheumatic disease originated in our sixty-seven patients, it is most probable that the incidence of rheumatic heart disease among the native Texans would be somewhat lower than 7.3 per cent. In these sixty-seven patients, thirty-six showed mitral stenosis; three had combined mitral and aortic disease, and in two instances, proved at autopsy, cases of rheumatic mitral stenosis were found in patients who also showed a syphilitic aortitis. Fifty-three (79.1 per cent) showed cardiac enlargement; twenty-eight (41.8 per cent) developed congestive heart failure, and seventeen (25.4 per cent) had auricular fibrillation. More than one third of these patients were between 20 and 30 years of age, and more than three fourths were under 40 (table 2). Another observation of interest in this group is that fifty-two, or 77.6 per cent, of the cases were in white persons while only fifteen, or 22.4 per cent, were in negroes. Thirty-three (49.3 per cent) were males and thirty-four (50.7 per

TABLE 2.—*Incidence by Decades, Race and Sex in Etiologic Types* *

Type	0 to 10				10 to 20				20 to 30				30 to 40				40 to 50				50 to 60				60 to 70				70 Plus				Total
	White		Negro		White		Negro		White		Negro		White		Negro		White		Negro		White		Negro		White		Negro		White		Negro		
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	
Hypertensive	..	..	..	..	1	1	2	..	3	2	6	2	6	7	15	28	17	13	39	26	34	26	34	15	52	16	19	6	33	16	13	4	436
Syphilitic	..	..	..	..	..	..	..	1	2	..	7	2	7	..	33	9	13	2	34	6	9	2	21	8	7	1	4	1	3	..	4	1	177
Arteriosclerotic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3	1	1	9	2	5	1	30	8	8	1	33	12	6	2	125
Rheumatic	3	1	..	1	5	..	..	2	8	10	2	6	3	4	1	1	3	6	1	..	3	2	1	..	3	1	..	..	..	..	..	..	67
Angina pectoris	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	1	2	..	..	5	2	..	6	1	..	..	..	..	1	..	..	21
Subacute bacterial endocarditis	..	..	..	..	..	2	..	..	3	..	1	1	1	1	..	..	1	..	2	..	..	..	1	..	1	..	..	..	..	..	..	..	14
Thyrotoxic	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..	2	..	..	1	1	2	..	..	2	..	.	..	..	..	..	12
Congenital	2	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	6
Miscellaneous	1	1	1	..	..	..	..	..	..	..	..	1	1	..	..	1	..	..	1	1	1	1	..	..	1	1	..	..	..	..	..	..	12
Unclassified	1	..	..	3	2	2	2	2	3	2	3	2	4	4	3	1	6	1	1	..	1	..	..	..	1	1	..	..	..	..	..	..	45
Total	7	5	1	5	8	5	4	5	22	15	19	15	22	16	53	42	43	29	79	34	63	36	64	30	96	30	31	8	69	29	23	7	915

* In this table ♂ indicates male, and ♀, female.

cent) were females. Apparently the negro is less susceptible to rheumatic infection, at least of the heart, than is the white race.

ANGINA PECTORIS

Angina pectoris, while not an etiologic classification, appears to be the best name for the class of heart patients whose chief manifestation of cardiac abnormality is paroxysmal heart pain. Twenty-one, or 2.3 per cent, of the patients of the series were found to belong in this group. Comparing this figure with those of Wood, Jones and Kimbrough [3] from Virginia and Massachusetts, it is noted that there are only about one fourth as many cases of angina pectoris among the Texas group as were reported from the two more northerly situated states. The reason for this may possibly be looked for in the differences in the character of the population making up the various series. In the Charity Clinic of the John Sealy Hospital medical service, angina pectoris is not seen very frequently, whereas among the private patients it is fairly common. Sixteen, or 76.2 per cent, of our twenty-one cases were in private room patients. Not a single instance of this type of heart disease occurred in the negro. Fifteen, or 71.4 per cent, were in males, and only six, or 28.6 per cent, were in females. Two thirds of the patients were equally divided between the sixth and seventh decades of life. Three, or 14.3 per cent, developed congestive heart failure, and only one, or 4.8 per cent, showed auricular fibrillation. Thirteen, or 61.9 per cent, had cardiac enlargement. During the stay of these patients in the hospital there were only three deaths, all private patients, and in none was permission to do any autopsy obtained. It is an interesting observation that none of the twenty-one patients presented any evidence of syphilis, although two gave a positive history, and conversely none of our relatively large group of patients with syphilitic heart disease had angina pectoris. Twelve, or 57.1 per cent, of the cases of angina pectoris were founded on a hypertensive heart disease basis; one patient was markedly arteriosclerotic, and one had plumbism. This left seven, or one third, of the group in whom an etiologic foundation for the angina pectoris could not be assigned.

SUBACUTE BACTERIAL ENDOCARDITIS

There were fourteen patients, or 1.5 per cent, with subacute bacterial endocarditis, of whom ten, or 71.4 per cent, were males; four, or 28.6 per cent, were females; nine, or 64.3 per cent, were white, and five, or 35.7 per cent, were negroes. This form of heart disease then was two and one half times as frequent in males as in females, and occurred almost twice as often in whites as in negroes. Two thirds of the patients were under 40 years of age. From the etiologic standpoint, the bacterial endocarditis was engrafted on a rheumatic heart disease in six (42.9 per cent), and syphilitic heart disease was the basis in two (14.3 per cent); in one case a staphylococcus endocarditis complicated a furunculosis; in another a gonococcal endocarditis was a part of a systemic infection with the gonococcus, and in three cases no preexisting disease could be determined. In ten patients, or 71.4 per cent, cardiac enlargement was noted; ten (71.4 per cent) developed congestive heart failure, and all ended fatally, either in the hospital or later. In seven (50 per cent) autopsy was performed. Auricular fibrillation did not occur once in this group. The blood cultures were positive in three for *Streptococcus viridans;* in one for *Staphylococcus aureus,* and in one for the gonococcus; in six the cultures were negative, and in three patients cultures were not taken. All of the three cases without blood cultures were proved at autopsy, however.

THYROTOXIC HEART DISEASE

Heart disease associated with hyperthyroidism was encountered twelve times (1.3 per cent). The ratio of women to men was as 2 to 1. This form of heart disease was almost equally divided between the whites and the negroes. The majority occurred in patients between 30 and 60 years of age. Seven (58.3 per cent) had congestive heart failure, and ten (83.3 per cent) showed enlarged hearts. Five (41.7 per cent) developed auricular fibrillation, the highest percentage for any of the groups. Seven (58.3 per cent) also showed vascular hypertension.

CONGENITAL HEART DISEASE

Congenital heart disease was found six times, or 0.7 per cent, in each instance in children under 10 years of age. Two of these patients were males, and all except one were white. In four, or 66.7 per cent, pulmonary stenosis was found, and in the remaining two the nature of the defect could not be determined.

RENAL IMPAIRMENT IN HEART DISEASE

The importance of impaired renal function to the whole question of heart disease, more especially in prognosis, prompted an investigation as to its frequency in this entire series. In determining impairment of renal function, data were obtained by routine urinalyses, Mosenthal tests, phenolsulphonphthalein elimination, and chemical analyses of the blood. Only definite departure from the normal was considered significant

TABLE 3.—*Incidence of (A) Renal Impairment, (B) Syphilis, (C) Congestive Heart Failure, (D) Cardiac Enlargement and (E) Auricular Fibrillation, in Different Etiologic Groups*

Type	Total No. of Cases	A Renal Impairment		B Syphilis*		C Congestive Heart Failure		D Cardiac Enlargement		E Auricular Fibrillation	
		No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent
Hypertensive	436	207	46.6	125	28.3	321	73.6	379	86.9	34	7.8
Syphilitic	177	42	24.4	154	87.0	109	63.4	154	87.0	6	3.4
Arteriosclerotic	125	32	25.6	30	24.0	69	55.2	73	58.4	17	13.6
Rheumatic	67	8	11.9	11	16.4	28	41.8	53	79.1	17	25.4
Angina pectoris	21	0	0.0	2	9.5	3	14.3	13	61.9	1	4.8
Subacute bacterial endocarditis	14	4	28.6	2	14.3	10	71.4	10	71.4	0	0.0
Thyrotoxic	12	1	8.3	3	25.0	7	58.3	10	83.3	5	41.7
Congenital	6	0	0.0	0	0.0	1	16.6	4	66.6	0	0.0
Miscellaneous	12	6	50.0	2	16.6	7	58.3	8	66.6	2	16.6
Unclassified	45	5	11.1	8	17.7	31	68.8	35	77.7	3	6.66
Total	915	305	33.3†	337	36.8†	586	64.0†	739	80.7†	85	9.4†

* History, autopsy, or Wassermann reaction positive.
† Percentage of total, 915 cases.

enough to warrant the assumption that renal function was impaired. Of the 915 patients, 105 (33.3 per cent) showed evidences of renal impairment. This rather high percentage is doubtless due to two factors: (1) the large number of patients with hypertensive heart disease in the series, and (2) the fact that a considerable number in all the groups had suffered from congestive heart failure on one or several occasions, and that the renal change was the result of long standing passive congestion. Renal impairment occurred among the various types of heart disease as shown in table 3 A. In the 210 cases studied at autopsy, anatomic evidence of nephritis occurred 151 times, or 71.9 per cent, while in the 705 purely clinical cases renal impairment was demonstrated in only 154, or 21.8 per cent. Obviously, then, the minor degrees of pathologic changes in the kidney of chronic heart disease do not markedly affect the clinical measures of renal function.

COMPARISON OF AUTOPSY AND CLINICAL DATA

In table 4 the observations in the 210 cases of the series which came to autopsy are shown. Space does not permit a consideration of this group in detail. The

TABLE 4.—*Autopsy Data in Two Hundred and Ten Cases*

Classification	Number of Cases	Percentage	Hypertrophy and Dilatation	Hypertrophy	Dilatation	Aortic Stenosis	Aortic Insufficiency	Mitral Stenosis	Mitral Insufficiency	Tricuspid Insufficiency	Pulmonary Stenosis	Patent Foramen Ovale	Acute Pericarditis	Chronic Adhesive Pericarditis	Acute Myocarditis	Chronic Myocarditis	Acute Endocarditis	Chronic Endocarditis	Syphilitic Aortitis	Atheroma of Aorta	Aneurysm	Coronary Artery Sclerosis	Coronary Occlusion	Nephritis
Hypertensive	102	48.6	47	41	4	..	..	..	4	1	..	..	6	2	..	49	3	4	19	45	..	22	3	68
Syphilitic	46	21.9	25	14	3	1	33	..	1	..	..	..	1	..	1	15	1	1	46	7	16	13	..	34
Arteriosclerotic	35	16.6	10	6	..	..	..	..	2	..	1	..	1	..	2	21	..	1	4	24	..	13	1	30
Rheumatic	9	4.3	5	1	1	..	..	5	1	..	..	..	..	..	..	4	3	3	3	2	..	..	..	7
Subacute bacterial endocarditis	7	0.5	2	3	1	..	1	1	..	..	..	..	1	..	3	1	7	..	2	1	..	..	..	6
Congenital	1	2.9	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Miscellaneous	6	1.9	2	..	2	..	..	..	..	1	..	..	..	1	1	1	3	..	2	..	..	..	..	4
Unclassified	4	3.3	..	3	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	1	..	2
Total	210	100.0	92	68	12	1	34	6	9	2	1	1	9	3	7	91	17	9	77	81	16	49	4	151

percentages of the different groups closely approximate those for the entire series of 915 cases, which, we believe, establishes the substantial accuracy of the classification according to the etiology of those cases seen only in the clinic. The classification according to etiology of the 210 cases studied at autopsy was made only after consultation with the pathologist in all cases in which any doubt existed, and his opinion was the basis of the final grouping. In the syphilitic group of the autopsy cases it is again emphasized that pure syphilitic aortitis without heart disease is not included in these figures, and that the pathologic conclusions drawn from gross and microscopic studies of the hearts and aortas in atypical cases decided the classification.

COMMENT

Heart disease, as a whole, is in the South a somewhat different problem from that seen in the East and North, the difference arising chiefly from two large factors: (1) relatively low incidence of acute rheumatic fever and chorea in the South, and (2) the proportionately larger negro population in the South. These two considerations cause a very low incidence of rheumatic heart disease, with a much higher incidence of syphilitic heart disease. Hypertensive heart disease also appears to occur more frequently in the locality from which this report is written than in other sections (Virginia and Massachusetts) where comparable studies have been carried out. This finding may be partly accounted for on the basis of differences in the social strata from which the different reports have been compiled. Also, the comparatively low incidence of rheumatic heart disease causes a relative increase in the percentage of hypertensive heart disease. Over and above these considerations there appears to be a slightly higher frequency of this type of heart disease in the present series, the result, most likely, of the large number of negroes included in the study, and in whom hypertensive heart disease is more frequent than in the white race. The other common types of heart disease do not show especial points of difference in this section of the United States as compared with the others, so far as the available figures indicate.

SUMMARY AND CONCLUSIONS

The more important points in the study of 915 patients with heart disease have been presented. Two hundred and ten of the number came to autopsy, and the observations that were then made are given and compared with those in the clinical cases.

From this study, the following conclusions are justifiable:

1. The incidence of heart disease in the negro is 1.8 times as great as in the white race.
2. Rheumatic heart disease is the least important of the four main groups in this part of the United States.
3. Syphilitic heart disease is much more frequent here than in other sections, because of the large number of negroes in this locality.
4. Hypertensive heart disease is by far the largest group seen in the South, and it is more frequent there than in the East and the North.
5. The rarity of angina pectoris in the negro has been pointed out.
6. Syphilis is a relatively unimportant factor in the etiology of angina pectoris.
7. Arteriosclerotic heart disease is much more commonly seen in the white race than in the negro race, although the negro shows a very high incidence of advanced arteriosclerosis.
8. Thyrotoxic heart disease, in this series at least, gave the highest percentage of auricular fibrillation.
9. Impairment of renal function occurred in one third of all the cases of heart disease.
10. There is only a slight difference in the relative importance of the various etiologic types of heart disease in the clinical and in the autopsy cases.

ABSTRACT OF DISCUSSION

ON PAPERS OF DR. PEPPER, DRS. PHILLIPS AND ANDERSON, AND DRS. STONE AND VANZANT

DR. GLENVILLE GIDDINGS, Atlanta, Ga.: We are all quite in accord, I am sure, with the exceedingly conservative position taken by Dr. Pepper on the blood conditions in bacterial endocarditis, especially *Streptococcus viridans* endocarditis. In a general way, our observations have been quite similar. We have seen leukocytosis more frequently than leukopenia, although the count rarely runs higher than 10,000, and with the case showing no embolic phenomena, the white cell counts have been within normal limits. With the occurrence of embolism, whether to the spleen, kidney, brain or lung, the count has run transiently higher, the chief increase being in the polymorphonuclear leukocytes. In chronic sepsis, it is only natural that we should get a marked secondary anemia. With *Streptococcus viridans* sepsis, this anemia seems to vary in intensity with the individual case. In a few cases, even when the organism had been recovered from the blood months previously, the anemia was not marked. In one case, death resulted in five months with a rapidly progressing anemia.

The characteristic brownish pallor of the skin, the café au lait of Libman, that accompanies this disease is an interesting subject for speculation. Its occcurrence is certainly not explainable by anemia alone. In certain cases, more especially when the disease is becoming subacute, and when there is a rapid and marked destruction of the blood, there is apt to be an increase in the bilirubin in the blood, and the urobilin in the urine. It is believed that this destruction occurs in a lesser degree throughout the disease and is a prime factor in the production of the peculiar color shown in these cases. That cyanosis plays only a minor part is shown by the fact that there is rarely an anoxemia, except in the presence of decompensation or complications. As to the occurrence of macrophages in the peripheral blood stream in *Streptococcus viridans* endocarditis, Fontana found them in seven of eighteen cases, or 39 per cent. It is believed that the finding of this cell is simply an added evidence of chronic sepsis, but the failure to observe the cell does not necessarily disprove the presence of the condition. With the presence of the characteristic signs of *Streptococcus viridans* endocarditis, finding the macrophages clinches the diagnosis, even though cultures of the blood may be negative. There seems to be no particular stage of the disease during which the cells constantly occur. They may be observed early or late or they may be absent. As a general rule, these cells are seen rather infrequently, possibly in not more than 10 to 15 per cent of all cases. With the recovery of *Streptococcus viridans* from the blood, it is believed that prognosis based on blood cytology may be misleading. As a diagnostic and prognostic aid, its chief value is in those cases in which recovery of the organism from the blood stream may be temporarily or permanently impossible.

DR. LEONARD MURRAY, Toronto: Since 1917, I have followed a considerable number of cases included under the term disorderly action of the heart, of the English and Canadian nomenclature, or neurocirculatory asthenia, of the American nomenclature. These cases are of an extremely variable etiology; they follow all classes of conditions. In some cases, the fault is in the body cell itself; in others, various infections are important; but in all cases, the nervous system, with other systems, is below par. In following these cases since 1917, it has been interesting to note that many of those classified as disorderly action of the heart have been found to be cases of gradually increasing blood pressure as the years go by. Probably our largest group have shown this characteristic. In this we differ from Sir Thomas Lewis, who gives the largest group as tuberculous. Whether the nervous factor has been the cause of the pressure, or whether something else has caused the neurocirculatory asthenia and later pressure developed, I do not know, but it is interesting to note that a large group of these nervous patients are developing increasing blood pressure as the years go by.

DR. ALBERT A. HORNOR, Boston: The medical man should feel happy when he finds that heart failure or some other disabling cardiac condition is associated with hyperthyroidism, for then if the acute condition can be alleviated by the program which Dr. Phillips has outlined, most important of which are rest and the use of iodine, the patient should have become an operable risk and permanent improvement may be predicted. I was glad to see that Dr. Phillips had successfully used merbaphen to get rid of the edema of heart failure in cardiac patients with thyroid disorder. Several times I have wanted to use it but hesitated to do so, and it so happened that the edema subsided without my resorting to this drug. I think that we have a right to expect the heart failure to disappear whenever it is the first instance of failure for the heart concerned, as has been the case in all the cardiac patients with associated thyroid disturbance that I have seen during the past year. We have followed the rules laid down by Hamilton and Lahey that there should be a minimum of three weeks of absolute rest in bed for preparation of the patient with heart failure. I am delighted to see that Dr. Phillips has been able to get along with a shorter period of rest, and believe that his example of operating at the end of ten days may often be followed with advantage. On the other hand, in an occasional case it may take six weeks of rest and iodine to prepare for operation. I was much interested in what Dr. Phillips had to say about digitalis because I am very much in doubt as to the value of the routine employment of digitalis in the treatment of auricular fibrillation associated with thyroid disease. It has been our routine to digitalize with a single massive dose of digitalis in auricular fibrillation. In ten of eleven of these cases fibrillation persisted despite digitalization. In two cases the fibrillation ceased within three hours after digitalis had been given; in five cases between six and twenty-four hours, and in one case in seventy-two hours. I also studied the effect of digitalis in twenty cases showing fibrillation after an operation for thyroidism. Ten of these patients were those whose fibrillation persisted despite digitalization before the operation, and it continued to persist during their convalescence of from eight to fourteen days after operation. In the group which developed the fibrillation after operation, three yielded to digitalis in three hours; six yielded in from six to eighteen hours, while one yielded in thirty-six hours. If we judged the effect of digitalis only in those cases in which the fibrillation ceased in from six to twenty-four hours after a single massive dose of digitalis, it would be seen that it affected only eleven of twenty-nine instances of fibrillation. I am still in doubt about the value of giving digitalis for fibrillation in the absence of heart failure. The next thing to do is to give it in alternate cases in a long series.

DR. W. S. THAYER, Baltimore: Dr. Pepper's paper interested me very much. The only way one can make a good report on anything is to report on the things one has seen and done oneself. I have seen macrophages again and again in malarial fever. They are always present in pernicious malarial fever. I suspect that they are not specific to these septicemias but rather the evidence of a grave general infection. Dr. Pepper's point with regard to leukocytosis is sound. Anemia is, perhaps, rather an index of the gravity of the condition and complicating conditions than of the mere duration. Streptococcal infections in general, unless they are associated with focal infections, are not apparently productive of any essential leukocytosis. A reduction in the number of leukocytes is a rare phenomenon and has nothing to do with such an infection as this. I do not believe that we are going to find anything specifically helpful in the character of the blood. Dr. Phillip's statistics are amazingly large. Certain things he said interested me very much. I have a strong feeling, however, that in instances of failing heart, one should go very slowly before one makes up one's mind that one is not going to give the patient the benefit of the operation. It is surprising how much improvement may occur, even if the fibrillation does not disappear, in some patients. When a patient reaches that stage, it is a matter for the patient and the patient's family to decide whether they will take the grave risk of an operation or a perfectly certain short life of considerable discomfort against possible real recovery. Dr. Stone's paper is an excellent summary. I am interested in what he says about the relative frequency of rheumatic heart disease in the South as com-

pared to the North where rheumatic heart disease is relatively infrequent. Yet I do not believe that it is so infrequent as we are inclined to think. Ten years ago I thought rheumatic heart disease was much less frequent in Baltimore than I think it is now. Rheumatic fever does not mean necessarily pain in the joints. What we term rheumatic fever is more a disease of the heart than of the joints. The frequency of syphilitic heart disease is great everywhere and especially in regions where the negro forms a large proportion of the patients. For some reason, cardiovascular symptoms develop rapidly in the negro. I am rather surprised to hear Dr. Stone's conclusions about the greater relative frequency of hypertensive cardiovascular disease in the South than in the North. Dr. Stone spoke of the infrequency of angina pectoris in the negro. That I believe is true. Angina pectoris, as one sees it in the Caucasian, hardly occurs in the negro, and it is because the term angina pectoris is purely symptomatic fear. The fear that is so prominent a symptom in the white person does not occur in the negro, but I will venture to say that the pains are just the same. The negro does not complain of them, although he has felt them. That which the white man speaks of in a graphic, striking manner, the negro refers to as "misery in the stomach" or "misery in the chest."

DR. PAUL D. WHITE, Boston: Dr. Stone has presented an interesting and useful survey of heart disease as seen in one of our Southern clinics, especially valuable because of his comparison of the clinical and postmortem data. It should serve to stimulate similar studies in other parts of the South, and North as well. Such a tabulation, imperfect though it may be in our present state of knowledge, is a considerable step ahead and a basis for further studies. In comparison with our conditions in New England, as Dr. Stone has said, rheumatic heart disease is not so common in Texas, while syphilitic aortitis and hypertension as etiologic factors are much more frequent. Angina pectoris is also very low in incidence in Dr. Stone's series, far less common than in private practice in New England. But even in hospital practice with us in the North, angina pectoris is apparently more common than in Dr. Stone's series. I should like to ask Dr. Stone what percentage of his series consisted of private patients. This, as we found in our study, makes a good deal of difference, not only with respect to angina pectoris, but also in regard to rheumatic heart disease, which is much less frequent in private practice among the well to do than in practice among the poor, and to arteriosclerotic heart disease, which is commoner in New England among private patients because of a relatively high incidence of older persons in the group. Angina pectoris should either be included as one of the five most important types of heart disease (rheumatic, hypertensive, syphilitic, arteriosclerotic forms and angina pectoris) or else be classed as coronary or aortic disease (for which inclusion we are not yet quite ready). Coronary thrombosis is an important manifestation of coronary or arteriosclerotic heart disease. In New England it is not rare, and such a diagnosis is being made quite justly more and more often. How much coronary thrombosis did Dr. Stone find in his series either clinically or at postmortem examination?

DR. JOHN J. SAMPSON, San Francisco: The relative infrequency of the report of macrophages in the peripheral blood in subacute endocarditis, as stated by Dr. Pepper, may not be entirely due to the inability to recognize these cells or to their total absence in many cases, but rather to their occurrence in showers. The rapid fluctuation, within a period of hours, in the number of these cells I observed to be the usual rather than the unusual condition. McJunkin and Evans and Simpson experimentally produced macrophages in the peripheral blood stream of rabbits by the intravenous injection of colloidal and particulate matter. They found that the cells in question did not occur uniformly during the period of a series of injections but rather in showers, and the cells in such showers contained the particulate or colloidal matter injected many days previously. The supravital staining technic of Evans or Sabin with neutral red and janus green I likewise found valuable in identifying these cells. These cells were not found specifically in subacute endocarditis.

DR. NATHAN ROSENTHAL, New York: I studied the blood picture of more than 200 cases. In addition to the blood changes described by Dr. Pepper, I found additional changes in some of the cases. Twenty cases presented distinct purpuric manifestations as well as the usual petechial phenomena found in this disease. Eleven of these cases showed the blood changes found in thrombocytopenic purpura hemorrhagica; that is, the normal coagulation time, prolonged bleeding time, and positive tourniquet test, but rarely the lack of clot retraction. In some of the cases, the blood platelets were normal in number, so that we must consider a very marked disturbance in the blood capillaries of this disease as also responsible for the purpura. It is interesting that the tourniquet test is positive in a majority of the cases of subacute bacterial endocarditis. Sir Thomas Lewis uses the sphygmomanometer at 70 millimeters of mercury for three minutes. This is more sensitive than the ordinary tourniquet. In another group of cases the spleen was greatly enlarged and resembled to a certain extent cases of Banti's disease. Here we found a persistent leukopenia, but the diagnosis was evident from the presence of a heart lesion and the petechiae of the skin. Still another group showed the presence of hypertension associated with nitrogen retention. In these cases, the hemoglobin and red blood cells showed a relatively higher color index, in one case above 1.

DR. J. MARION READ, San Francisco: There is one point in Dr. Phillips' paper to which I wish to direct especial attention; namely, the age factor in the causation of cardiac breakdown in thyrotoxicosis. The age of the patient and the duration of the disease are of greater moment than its severity as measured by the basal metabolic rate. I recently reviewed 280 cases of exophthalmic goiter and so-called toxic adenomas, and found that the average age of those patients showing cardiac impairment was 46 years, which agrees with Dr. Phillips' figure of 47 years. Another observation bearing on this point is that children with this disease do not present evidence of cardiac injury. We do not know why these patients tend to go into auricular fibrillation. My belief is that the added work that the heart must do in maintaining the elevated metabolic rate is the chief factor. There is no other condition analogous to hyperthyroidism in this respect except exercise, and the heart could not be driven by exercise in the manner that it is made to work in thyrotoxic patients.

DR. EUGENE S. KILGORE, San Francisco: While there are no figures for San Francisco quite comparable in comprehensiveness with those for Galveston, as given by Dr. Stone, it is my impression that his analysis for the white population would correspond fairly closely with ours, and would therefore show the same interesting contrasts with the conditions reported for New England. We certainly have little acute polyarthritis and chorea, as it is seen in New York and Boston, although the later stages of rheumatic heart disease seem almost, if not quite, as common as in those cities. Occasionally, we see incipient heart lesions follow simple sore throat, and we cannot help wondering whether after all climate has not more influence on the localization of the disease in the body than on its actual incidence. On the other hand, our incidence of syphilitic circulatory disease seems definitely greater than is indicated by the figures from Boston clinics. And, as for private patients, one of my friends who enjoys a considerable cardiac practice tells me that less than 1 per cent of his cardiac patients had syphilis. One can hardly assume that providence has given us more syphilis to compensate for our immunity to rheumatism; and so we are left to speculate as to whether the sons of the gold seekers really do lead more reckless private lives, or whether possibly the descendants from the *Mayflower* are more adept at concealing their peccadillos from their medical confessors.

DR. CARY EGGLESTON, New York: One point raised by Dr. Phillips has proved of considerable interest to me. From conversations with members of the Mayo Clinic and from the very brief published statements emanating from that clinic I have gained the impression that digitalis is regarded as exceptionally toxic in the presence of the thyrotoxic heart, and that a considerable increase in the mortality of the patients followed the administration of digitalis preoperatively. On the basis of this information, plus the experiences recorded today by Dr. Phillips with his large group of

patients with auricular fibrillation, I want to ask him whether he can give us any definite information as to the reaction of his patients to digitalis, so far as any element of increased or decreased postoperative mortality is concerned.

DR. JAMES E. PAULLIN, Atlanta, Ga.: I am particularly interested in the statistics presented by Dr. Stone relating to the occurrence of rheumatic and syphilitic heart disease in the South. Recently a review of 660 cases of heart disease occurring in a large negro clinic connected with Emory University was presented. According to these figures, rheumatic heart disease with all of its complications constituted only 10.7 per cent of the cases; on the other hand, syphilitic heart disease with its complications constituted 39.3 per cent of the cases. As is well known, syphilitic infection is most common in the negro and would, therefore, furnish a larger number of patients with heart disease than would a corresponding group among the white race. In our group of patients with syphilitic heart diesase, approximately 75 per cent of the cases occurred before the age of 50. Approximately 83 per cent of the patients had had absolutely no treatment for the primary syphilitic infection; 14 per cent had had treatment of some kind but wholly inadequate; 3 per cent had had more intensive treatment consisting of arsphenamine, mercury preparations and potassium iodide, but in not one case could we reasonably believe that the patient had had what is commonly believed to be anything like adequate treatment. Syphilitic heart disease and its complications are one of the greatest disabling infections with which we have to deal in the negro race; furthermore, it occurs at a period of life when the individual should be most useful and helpful; it is second in importance only to the disability resulting from the arteriosclerotic hypertensive disorders.

DR. O. H. PERRY PEPPER, Philadelphia: With regard to the simulation of primary addisonian anemia by subacute bacterial endocarditis, Achard and Foix have reported two cases in which the hemoglobin and the red cell figures were suggestive. These patients had 26,000 and 28,000 white cells, respectively. These figures would today throw out of discussion any thought of primary anemia. In regard to the part played by the endothelial lining of the capillaries in the production of the endotheliosis, it may be said that it is quite possible that the macrophages come from such a source. This has been suggested by various writers, and they have supported their view with the fact that massage of the part from which the blood is drawn increases the number of these cells. If the endothelium of the capillaries is injured it would help to explain the finding of positive tourniquet tests in these patients, and the endotheliosis might then be thought of as representing not so much a reaction to the presence of bacteria or other particulate matter in the blood stream, as an evidence of the injured state of the lining endothelium of the capillaries.

DR. J. P. ANDERSON, Cleveland: I am very glad that Dr. Thayer emphasized the importance of operating in all these cases, even when the outlook appears rather hopeless. We have adopted the policy of operating in every case in which the internist feels that any benefit may be secured unless, of course, the condition is obviously hopeless. Naturally, in many of these bad risk cases in which there is gross edema which does not clear up under absolute rest and other treatment, death may occur in spite of the best surgery. The surgeon knows before he starts to operate on such a patient that he is taking more than the average risk, but in our experience nothing except operation offers very much hope. If we could see all patients within the first twelve or eighteen months after the onset of the hyperthyroidism probably persistent auricular fibrillation would not occur; but when patients have had toxic symptoms for from five to fifteen years with the resultant increased heart rate, and in some cases have had irregular heart action for ten years or more, then it is not to be expected that they will revert to normal even after quinidine is used. Dr. Eggleston questions whether we think that the use of digitalis before and after operation increases mortality or reduces it. In our first series of seventy-five cases, in only 32 per cent was normal rhythm restored. That series, as Dr. Phillips has pointed out, included a larger number of more serious cases. The average age was older and the average length of the hyperthyroidism had been longer than in the second group. One death in the second group was definitely due to vegetative endocarditis, and that death cannot be attributed to operative procedure. That would have appeared in any case. A second death in this series was more or less expected. Only one death out of these seventy-five cases could be considered as an operative mortality, and digitalis was used in every case. In view of these facts, I do not think that we could consider that the use of digitalis interferes with the good results.

DR. C. T. STONE, Galveston, Texas: I quite agree with Dr. Thayer that rheumatic fever in the South occurs more frequently than is generally believed by many physicians who practice there; but, as he pointed out, many of the patients with rheumatic heart disease have never at any time given a history of a preceding attack of acute rheumatic fever or chorea. That happens so often that we have formed the habit of regarding these patients as having a primary rheumatic endocarditis. However, I should like to emphasize the comparison of the figures for rheumatic heart disease arrived at from a study of the clinical cases and those examined at autopsy. In a study of the whole series of 915 patients, we had 7.3 per cent with rheumatic heart disease, whereas in the 210 examined at autopsy, only 4.3 per cent showed rheumatic heart disease. These cases were studied very thoroughly. In each instance a section of the heart muscle was examined histologically. Dr. Thayer's remarks about angina pectoris in the negro are interesting. It gives me a somewhat different point of view of the problem because we know that precordial pain, and especially substernal pain, is often present in the negro with syphilitic heart disease. However, the typical paroxysmal type of heart pain of angina pectoris is rare in the negro. In only one instance in this series was it encountered, and in that case it was associated with abdominal pain, which was proved at autopsy to be due to coronary occlusion. There was a small proportion of private patients in this series, about 12 or 15 per cent. In reply to Dr. White's question, there were four cases of coronary thrombosis in the whole series of 915 cases.

TUMORS OF CAUDA EQUINA AND SPINAL CORD

REPORT OF FOUR CASES IN WHICH MARKED SPASM OF ERECTOR SPINAE AND HAMSTRING MUSCLES WAS OUTSTANDING SIGN *

GEORGE E. BENNETT, M.D.
BALTIMORE

Tumors within the spinal canal may occur in so many locations, not only regarding the segments of the cord but as to the relationship to the circumference of the cord, both intramedullary and extramedullary, that one does not have to draw on one's imagination to realize that the symptoms produced are so variable that it is only in the reporting of group cases that it will be possible to make progress in the diagnosis of this condition.

It is my opinion that a great many patients come to orthopedic surgeons complaining of local and referred pain in the region of the spine who have no bone lesion but a lesion of the cord, and are seen by this group of surgeons much earlier than by the neurologist or neurosurgeon.

I have selected four cases of spinal cord tumors that have come under my observation, all having shown symptoms that suggested osseous, muscular and ligamentous changes rather than any pathologic condition of the nerves. It is hoped that, by exposing my mis-

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takes, as well as the mistakes of others, in failing to make correct diagnoses in this series of cases, I shall be able to attract the attention to the early clinical picture of (1) variable pain in the spine and nerve roots; (2) extreme spasm of the erector spinae muscles followed by lateral deformity of the spine, and (3) extreme bilateral spasm of the hamstring group. All these signs appeared long before any motor or sensory changes had occurred.

CASE 1.—A. M., a boy, aged 11, seen, Jan. 22, 1919, whose past history was essentially negative and whose family history was negative, began to cry with pain in the back in October, 1917. This was associated with slight elevation of the temperature (99.3 F.). Roentgenograms made at this time were negative. The patient continued to have pain, but with the assistance of a plaster jacket and of rest at intervals continued to get about. When I saw him there existed a marked stiffness of the back with practically no motion in any direction, and an extreme shortening of the hamstrings on the right and left sides. Neurologic examination by Dr. H. M. Thomas was negative for any organic lesion. The patient was anesthetized to see whether the muscles would relax; the hamstrings relaxed but the spine remained stiff. A diagnosis of hysteria was made and the patient was partially isolated for several weeks. He returned to Baltimore in February and was admitted to the Johns Hopkins Hospital, where he was seen by Dr. Barker and Dr. Thomas. All neurologic and laboratory studies were negative. The only outstanding physical observations were persistent stiffness in the spine and shortening of the hamstrings, associated with variable pain and a beginning lateral curvature of the spine. The patient remained at the Johns Hopkins Hospital, completely isolated from his family, for several months. His general health improved and he was sent to a boys' camp in the summer of 1922 with a medical student as companion. He was able to play tennis and swim. His general health was good with a slight increase in scoliosis; there was no change in muscle stiffness. During his stay at Johns Hopkins Hospital he was exhibited before several medical conventions, including the American Orthopedic Association, and no one ventured a diagnosis. In October, 1922, he began to develop weakness in his legs and was totally paralyzed in the legs early in December. He was operated on by Dr. Dandy at Johns Hopkins Hospital, Jan. 24, 1923. Laminectomy revealed an intradural and extradural spinal cord tumor. Following the laminectomy the patient had deep roentgen-ray therapy. In a few months he began to grow rapidly. He was operated on for contractures of the feet. He now has some slight residual paralysis of the legs and marked deformity of the spine.

The clinical picture in case 1, with such a marked contracture of the hamstrings and erector spinae muscles, was so striking that I recalled having seen a similar case in consultation with Dr. Julius Friedenwald in June, 1920. The patient was traced and found to have died in the Clifton Springs Sanitarium in August, 1924.[1]

CASE 2.—A single woman, aged 41, who entered the sanatorium, May 30, 1914, had begun to ail at the age of 19, when she had a severe pelvic inflammation called a cellulitis. It was accompanied by pain and itching. Shortly after this disappeared she had a so-called attack of peritonitis, which left her abdomen very tender for over a year. In December, 1905, she had a severe attack of neuritis in the knee; in 1908 she had neuritis of the face and left arm that lasted six months. Again in 1911 she had a severe neuritis under the breasts. All these attacks were apparently severe and lasted over a period of months. In 1914, at the time of admission, she complained of an itching and burning in the pelvis, which began with an acute inflammation accompanied by severe pain a year before, in March, 1913. This itching had led to masturbation. In June, 1913, she was examined in Baltimore. The pelvic disorder was considered psychic and she was psychoanalyzed and given psychic therapy. The pelvic disorder did improve but the many sexual suggestions that she received greatly disturbed her and she entered the sanatorium in a depressed and worried state. She still had the burning and congestion of the pelvis, but her worry over her attitude toward it was her chief malady. She was put on a modified rest cure, improved, and was discharged with a diagnosis of anxiety neurosis.

In December, 1915, she began to have acute daily attacks of pain in the lower abdomen and later pain in the ankles. A diagnosis was made in North Carolina of "indigestion and hyperacidity of the stomach."

From March, 1915, to June, 1916, she had a cough, rheumatism and almost daily attacks of abdominal indigestion. Her tonsils were removed, June 7, 1916, and the rheumatism was somewhat relieved.

In September, 1917, the patient was treated in Baltimore for eczema of the hands and itching of the legs, mostly below the knees. She also had indigestion during the afternoon and early part of the night. The diagnosis made at that time was autointoxication from retention of food in the cecum and slight ulceration of the stomach. A strict diet relieved the ulceration of the stomach, but the intense itching of the legs continued.

In April, 1918, agonizing pain in the nerves of both legs appeared, and reoccurred at intervals. March 17, 1919, the pain was very severe, especially at night, unless she stooped over or yawned during the day, at which time the pain was extreme. March 24, 1919, a pessary was inserted in the uterus with relief of the pain in the legs, but the pain in the back and hips continued. A roentgenogram of the spine at this time was said to show a beginning infectious arthritis.

At this time she entered the Clifton Springs Sanitarium a second time. On examination there was tenderness in both lower quadrants, especially the right. Her reflexes were active but equal. She complained of pain at the tip of the spine and in the left leg. The uterus was large and retroverted. The patient was, therefore, operated on; a fibroid was removed from the uterus, which was suspended, and some small ovarian cysts were punctured. The patient was partially relieved. She went home in hopes that she would continue to improve. In August, 1919, the diagnosis on discharge was uterine fibroids, retroversion of the uterus and sciatica.

She returned to the sanatorium, Oct. 19, 1921, and gave the following interval history: She had some contractures of the muscles of the right leg in May, 1919. Then in August, 1920, her right leg suddenly gave away and her left ankle gave away in July, 1921. She had great pain all the time in the right sciatic, in the lower half of the spine and in the rectum, the latter especially if the bowels did not move. In the fall of 1919 she had difficulty in voiding. In January, 1920, a diagnosis of marked arthritis of the spine was made. From January to June, 1920, she was given cystoscopic treatment for the bladder difficulty. In New York "extremely poisonous serum" was injected, with marked reaction and increase in symptoms. This was presumably nonspecific protein injections for arthritis. From July to August, 1920, she was treated in Baltimore with colonic flushing for chronic colitis. From December, 1920, until July, 1921, she was treated at Hot Spring, Ark., for arthritis of the spine, colitis and neuritis.

In October, 1921, she was seen by an eminent neurologist in Philadelphia and a diagnosis of tabes dorsalis was made, although the blood Wassermann reaction was negative and two spinal punctures failed to yield any fluid. Roentgen-ray study at this time showed no arthritis of the spine, but a marked atrophy of the vertebrae.

Soon after this final study in Philadelphia she entered the sanatorium for the third time, Oct. 19, 1921. She was emaciated, she could not stand, her legs contracted and the muscles were spastic. A roentgenogram of the spine showed no signs of arthritis, but a marked bone atrophy of the dorsal and lumbar spine and pelvis. There was some scoliosis of the vertebrae. Gastro-intestinal roentgen-ray examination was negative. Neurologic examination showed a patchy anesthesia over the dorsum of the feet, but no definite conclusion regarding her condition was reached until March, 1922, when a typical saddle shaped anesthesia was found and a diagnosis of tumor of the cord

1. A complete report appeared in the Clifton Medical Bulletin 2, number 1, March, 1925, from which the case as reported here is abstracted.

involving all the sacral nerves was made. A spinal puncture was attempted at this time, and although no fluid was obtained a small piece of tissue was removed with the needle. On examination this tissue was found to contain nerve cells, and as the puncture was made low down in the lumbar region the fact that nerve tissue could be thus removed was taken as conclusive evidence of cord tumor. The patient now, however, refused operation, stating that she had suffered so much she preferred to be left alone.

Her condition became gradually worse. Morphine at times failed to relieve her suffering, so that chloroform had to be used. She developed large ulcers on the thighs and became completely paralyzed below the waist. She lost control of both sphincters and finally died, in August, 1924.

Autopsy showed a large glioma of the spinal cord involving the cauda equina, fatty degeneration of the liver and emaciation. There were no signs of stomach ulcers or chronic appendicitis.

In retrospect this case is very instructive. It is interesting to note the different diagnoses, such as sexual perversion, anxiety neurosis, autointoxication, colitis, retroverted uterus and tabes dorsalis, made by some of the best medical men in the country. From symptoms it seems possible that the tumor was present in 1913 causing the pelvic engorgement, although there were no definite signs of its presence. In 1915, however, the tumor was undoubtedly present and should have been diagnosed, but there seems to have been no definite spinal studies until October, 1921, when a diagnosis of tabes was made. At the time the diagnosis was made in March, 1922, the tumor was probably so large that operation would have offered only a relief from pain.

This patient presented the typical picture of case 1 when examined by me in the summer of 1920, except that the pain was more marked and radiated to the legs. For want of a better diagnosis the case was treated as an atypical arthritis. It will be noted that the patient was examined by an eminent neurologist in 1921. In lieu of my later experiences I feel sure that I would have suspected a tumor of the cord on account of the muscle changes, as mentioned.

CASE 3.—B. M., a man, aged 31, seen by R. W. Johnson, Jr., Dec. 9, 1923, complained of stiffness in the back and pain in both legs. The past history and family history were essentially negative. There had been several minor strains of the back but no definite injury. Onset of the trouble occurred in 1920 with stiffness in the back and legs and aching in the hips. Pain was variable and the patient was for a time free of it after starting to wear a brace. No sharp pain occurred except on sudden movements. There was stiffness and a dull ache in the back. A little limp had developed recently. The tonsils were removed without relief.

General physical examination was negative except for one suspicious tooth. The cervical spine was normal. There was no lateral curvature, and the physiologic curves were not exaggerated. The chest was symmetrical and the respiratory movements were free. The pelvis was well balanced. There was a very remarkable grade of muscle spasm of the erector spinae groups in the lumbar region. The three lower lumbar vertebrae were held absolutely rigid when attempts were made to move in any direction. The upper portion of the spine moved freely, beginning at the second lumbar vertebra. There was no tenderness on palpation over the articular or transverse processes of the lumbar spine; there was slight tenderness on heavy percussion. The sacro-iliacs were normal. There was pain on attempts at forced flexion of the spine, and straight leg-raising was extremely limited because of most marked contracture of the hamstrings. The patient complained of weakness of the left leg, but except for inability to stand on tiptoe on the left foot, no definite weakness was to be made out. There was no muscle atrophy of the thigh or calf. The knee jerks and the Babinski reflex were normal. Roentgenograms of the spine and pelvis were negative.

The impression was one of chronic lumbosacral strain; no arthritis; the possibility of tumor of the cauda equina to be borne in mind.

A supporting brace was supplied temporarily.

Jan. 14, 1924, there was no relief from the support. The symptoms were definitely much worse, and weakness of both legs was more marked. I saw the patient, as the condition seemed more suggestive of tumor than ever. There was foot-drop gait with insecurity; definite hyperesthesia in the feet and legs; no paresthesia or anesthesia. The right knee reflex was absent. There was definite weakness with atrophy of both calves and some weakness in the quadriceps. The hamstrings were much shortened and Kernig's sign was markedly positive.

January 16, the patient was referred to Dr. Irving Spear for neurologic examination, which revealed foot-drop gait; weakness of anterior and posterior leg muscles; achilles reflex lost on right; knee jerks normal and equal; Romberg sign negative; hyperesthesia of second and third lumbar nerve areas, both legs; no anesthesia.

The impression was one of tumor of the cauda equina, irritating the second and third lumbar roots and compressing the fourth and fifth nerves, more on the right than on the left.

The patient was admitted to the University Hospital, where the diagnosis was complicated by an incorrect Wassermann report, and only on check-up later was syphilis excluded and a definite diagnosis of tumor of the cauda equina made.

The patient was admitted to Union Memorial Hospital, and on March 3 an exploration of the lumbar spinal canal was made. A large, soft tumor was found extending from the twelfth dorsal to the third lumbar vertebrae. The tumor was entirely within the pia and lay among the nerve trunks of the cauda equina but was not invading. It resembled more than anything a bunch of the small seedless white grapes and was so loosely lobulated that it had to be removed in pieces which, however, were well encapsulated. Its apparent origin was from the filum terminale of the cord.

The pathologic report was: neurofibroma, benign.

Postoperative recovery was rather slow and was complicated by loss of vesical and bowel control and marked hyperesthesia of the legs; but gradually both of these features passed off.

Dr. Spear reported, Dec. 31, 1924, that the patient had good functioning lower extremities in spite of some weakness in the right gluteal and adductor muscles. Rectal control was slightly impaired at times. Vesical control was poor when walking. There was loss of libido and potentia. There was impairment of muscle sense of the leg, but pain and tactile sensation had returned.

There was marked improvement in motion and sensation nine months after operation, with further return to be expected.

CASE 4.—O. E., a woman, aged 25, seen by W. S. Baer, May 8, 1922, with family history and previous history essentially negative, dated the present illness to 1920, when she suddenly had a pain in the lower part of the back and lower right leg. This occurred while she was in swimming, and had been present practically every night since. At first this was only momentary, but it was quite severe. The pain was relieved by change in position; sometimes the patient was awakened at night because of the pain. She was put in a plaster cast for six months, as her first treatment. The condition became worse as the result, and the pain along the back of the right leg became more severe and she also developed pain along the back of the left leg almost as soon as the cast had been put on. She received orthopedic treatment for about a year, from which she got temporary relief. Chiropractors were also tried without relief. Dr. Baer diagnosed a lumbosacral lesion. Operation was advised but refused. Her condition remained about the same until 1924, when she consulted the Mayo Clinic, and at that place a diagnosis of arthritis of the sacro-iliac joint was made. She was treated for a scoliosis and put in a cast for ten days. Because of the pain she was unable to sleep, and it was necessary that the cast be removed. Apparently she was more comfortable at that time when she walked around. Ever since her visit to the Mayo Clinic she did not have as good control of the bladder as formerly and this had been getting worse ever since. The difficulty had been mainly in the loss of control of the sphincters. At that time the control of the bowels was good, but during the last six months the patient had noticed that this condition had been getting worse. There was no history of paralyses, numbness or twitchings of the legs; no girdle pain was experienced.

When the patient was examined by Dr. Baer, Sept. 26, 1926, she had a lateral deviation of the spine, with extreme spasm of the erector spinae muscles which permitted little, if any, motion. There was also some pain on palpation over the lower lumbar spine. There was a very marked shortening of the hamstrings, allowing the extended leg to be flexed only a few degrees. The patient was operated on by Dr. Dandy, Oct. 6, 1926. A tumor of the cauda equina was removed. Dr. Dandy could not identify the exact type of tumor but believed that it was one of unusual embryonic type.

This patient was first seen by Dr. Baer, May 8, 1922, and his examination at that time revealed a very marked stiffness of the muscles of the back and shortening of the hamstrings. This was associated with a great deal of pain. At that time his impression was that of a lumbosacral lesion. He saw the patient again, Sept. 24, 1926, presenting the same clinical picture of extreme spasm of the muscles of the spine, slight lateral deviation, hamstring shortening, and some slight disturbance of bowel and bladder control. Dr. Baer expressed the opinion that, on account of our former experiences in cases 1, 2 and 3, he became suspicious of a spinal cord tumor, which further examinations revealed.

4 East Madison Street.

ABSTRACT OF DISCUSSION

DR. EDWIN W. RYERSON, Chicago: There are more cases of the kind described by Dr. Bennett than most of us recognize. Four years ago I saw a woman, aged about 40, who on slight exertion had pain in the back. She was under the care of a distinguished internist who requested me to see her. It was perfectly evident to me that she had either a loose, weak lumbosacral joint or else that one of the sacro-iliac joints was painful. She had all the signs of low back pain without any symptoms which would enable one to localize it, either in the sacro-iliac joint or in a fifth lumbar vertebra, to the exclusion of anything else. It seemed more probable to me, however, that the location was sacro-iliac, because she had some pain in the left sciatic nerve. I do not remember whether the hamstrings were tight or not. It never occurred to me that she could have a spinal cord tumor. A sacro-iliac brace gave little or no relief. She then was seen by several other men. No one suspected a spinal cord tumor. She went finally to the Presbyterian Hospital, and it is my impression that Dr. Dean Lewis performed a gastro-enterostomy on her. As far as I know, it did not relieve the spinal symptoms, and I have been unable to find out whether the diagnosis of cord tumor was made before she died or after. It is my recollection that I was told that a cord tumor was finally suspected and was found at operation. At all events, she died. Now, this was a case in which many of us were absolutely and entirely off the track; we had no conception of what might be the trouble with this unfortunate woman. Since reading the abstract of Dr. Bennett's paper, and while discussing this case, I have recalled three or four other patients who I am sure had spinal cord symptoms. One of them was the familiar neurasthenic or hypochondriac type, or who goes from one man to another, and who is operated on first by the gynecologist and then by the general surgeon. The patient of whom I am now thinking had been operated on eleven times before she came to me. She had definite pain over the left sacro-iliac region, with sciatica. I did a fusion of the sacro-iliac joint, informing her that this would doubtless cure her. The operation did not afford any relief. I did not suspect a spinal cord tumor, and yet I am inclined to believe that she may have had a spinal cord tumor that was undiagnosticated by me and by every one else. She retired to her home in southern Illinois and had one or two other operations, but I was unable to find out what they were for.

DR. A. W. ADSON, Rochester, Minn.: Dr. Bennett, in calling attention to rigidity of the spine as an early diagnostic sign of spinal cord tumor, emphasizes a valuable point, since rigidity of the spine frequently occurs before paralysis develops. It is true that it is not a pathognomonic sign, but it should call attention to the possible existence of a spinal cord tumor and provoke a careful history in order to elicit the presence of root pain, which usually occurs simultaneously with rigidity. If root pain is present, it will be found to radiate along the course of the nerve involved, occurring usually at night, as in the cases described by Dr. Bennett. The pain is brought on, as a rule, by coughing, sneezing, stooping or lifting of weights—in short, by any method that will tend to raise the cerebrospinal pressure above the tumor and produce a downward pull; the tumor acts as a ball valve, and produces traction, directly or indirectly, on one of the roots. When a tumor is suspected, in the absence of neurologic observations, a spinal puncture in conjunction with the Queckenstedt or Ayer's combined puncture test should be advised. If a tumor is present and there is a partial block in the spinal canal, the fluid will be seen to rise slowly in the manometer on compression of the jugular vein and, in like manner, it will drop slowly when the pressure is relieved. If there is a complete block, there will not be a rise of fluid in the manometer on compression of the jugular vein. To aid further in the localization of a spinal cord tumor without other neurologic symptoms, injection with iodized oil may be employed. The iodized oil should be administered into the posterior cistern, with the patient in a reclining position, and while the head is being raised gradually, the descent of the iodized oil should be observed under a fluoroscope. If a tumor is present, a dark shadow will be observed, in the figure of a half moon, above the tumor. If the tumor is removable, it will be observed to ascend and to descend with each inspiration. If the block is complete, the iodized oil will collect above the tumor; if it is incomplete, it will be seen to drop on one side and settle in the most dependent portion of the arachnoid canal. The ordinary roentgenogram may fail to show a partial block and it is important, therefore, to employ the fluoroscopic method. Tumors that produce rigidity without disturbance in sensory, motor or reflex functions usually occur below the conus; when occurring along the cervical and the dorsal cord, signs of localization quickly develop which make the diagnosis obvious.

DR. R. V. FUNSTON, Detroit: We had a case recently in the clinic of the Harper Hospital that turned out to be a tuberculoma of the spinal cord. The symptoms were such as Dr. Bennett has described. The case was complicated by a tuberculosis of the sacro-iliac joint which added somewhat to our difficulties in making an early diagnosis. The patient was put to bed on a Bradford frame, in preparation for a sacro-iliac arthrodesis, which we never performed, however. The patient finally came to operation about six months after he was first observed. When first observed he did not have paralysis. This gradually came on with spasticity of the lower extremities, exaggeration of the patellar reflexes, ankle clonus and a bilateral Babinski reflex. This operation showed the tuberculoma to be at the level of the fourth dorsal vertebra; it was so deeply embedded in the tissues that it was impossible to take it out, and no attempt was made to do so. The man died about six weeks after the operation from miliary tuberculosis.

DR. J. W. SEVER, Boston: Will Dr. Bennett tell us something in regard to the neurologic observations in these cases, and the pathologic condition and localization of the tumor?

DR. GEORGE E. BENNETT, Baltimore: In answer to Dr. Sever's query regarding the neurologic observations, I purposely avoided that particular phase of the discussion because every one of these patients was examined by neurologists, and their examinations at the time from which these symptoms date were absolutely negative. They did not report to us any evidence of motor paralysis or anesthesia. As to the question of the pathologic changes, I stated that in this instance the two patients were operated on by Dr. Dandy, and that they had an unidentified type of tumor. I am quite sure that one of them was the eroding type of which Dr. Adson spoke because this boy's laminae were very much eroded. The tumor was in the cauda equina and extended up into the first lumbar vertebra. The point that I wanted to emphasize was that not all persons who complain of pain in the back should be suspected of having a bone lesion.

PHYSIOLOGY AND TREATMENT OF TRANSIENT HEMIPLEGIA*

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AND
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Transient hemiplegias are most often encountered in the aged and the sclerotic. The usual explanation of such an occurrence is that there has been a vessel spasm causing a temporary localized cerebral anemia (Langwill,[1] Edgeworth,[2] Heard,[3] Osler,[4] Allan,[5] Russell[6] and Parker[7]). There are facts supporting such a possibility, but also many points which make it seem unlikely and an unsatisfactory explanation.

In support of the theory of vessel spasm, vasomotor nerves have been noted in cerebral vessels and cerebral arteries show muscular tissue. Certain clinical reports give presumptive evidence in support of vessel spasm as a possibility. Osler reports an instance in an individual with Raynaud's disease in whom vessel spasm in the extremities with characteristic manifestations alternated with transient cerebral attacks. The ophthalmologists report spasm of retinal arteries in certain cases of migraine. Florey[8] in recent work has demonstrated that cerebral arteries can be made to contract by stimuli of various kinds, mechanical, thermal, electrical and chemical, directly applied to them. He states, however, that in his opinion no evidence is forthcoming for the presence of any nervous control over the caliber of the cerebral vessels.

Riegel, Jolly, François Frank[9] and Brown-Séquard believe that the caliber of cerebral vessels is influenced by stimulation of various parts of the sympathetic system, but their results are open to question as they have not controlled other factors, such as the general venous pressure, which has been shown by Leonard Hill[10] to have the most pronounced effects in passively affecting the caliber of cerebral vessels. As the situation now stands, it would seem certain that cerebral arteries have the power of contracting, but it is not established that stimulation of any part of the nervous system has caused it.

In explaining the cause of the transient hemiplegias, one must take into account the fact that these are most often seen in the sclerotic and the aged. Pathologic examination of the brains of such individuals show thickened, hard vessels of greatly reduced caliber. The character of the vessel wall is such that, whatever elasticity or contractility they once may have had, it has largely or entirely disappeared. They may be absolutely hard. Transient hemiplegias are not common in younger individuals whose vessels have retained their maximum elasticity. There is another possible explanation for cerebral anemia, whether transient or prolonged, which we believe is frequent. Our attention to it was attracted during the investigation of all cases of hemiplegia which entered the hospital. One feature is common to all whether there is a rupture of a cerebral vessel with hemorrhage, i. e., a true apoplexy, or an embolism or thrombosis. In all of these a certain portion of the brain is deprived of its blood supply, is rendered anemic, and is thrown out of function. The embolic cases can usually be diagnosed by the presence of a source for the embolus, usually in the heart, lung or pleural cavities. The other diagnoses, viz., apoplexy and thrombosis, are the most common clinical diagnosis in the presence of a hemiplegia of sudden onset. The pathologist, however, finds that the most common condition is not a ruptured vessel with hemorrhage. Most commonly a brain is found that shows the effects of anemia with degeneration in proportion to the duration and completeness of the anemia, and as a cause for it are narrowed, sclerotic vessels, the caliber often minute and usually without demonstrable emboli or thrombi. The instances of vessel ruptures are less frequent, the hemorrhages are often huge, and the immediate mortality is high.

In the patients with hemiplegia entering the wards with a diagnosis of apoplexy, and we use this term as meaning a vessel rupture with free hemorrhage, our attention was attracted particularly to the group giving the following history: A person above middle age after the usual work of the day goes to bed and has a cerebral circulatory disturbance come on during sleep. In some there was a high blood pressure; others had a normal blood pressure. It is not reasonable to assume that a person whose vessels have withstood the blood pressure during the day, and all the temporary rises consequent on physical effort without a vessel rupture, should still have a vessel rupture while he was asleep and with the pressure presumably at its lowest. A vessel gradually weakening over months or years may rupture, but it will rupture when the blood pressure is forced up by some cause and not while it is at its lowest.

In the individuals of this particular group with onset of their trouble at night, no source for emboli could be found. In some the paralysis cleared up in a few days; in others it was more persistent and in some, permanent. In those in whom it cleared up shortly, it was apparent that the cerebral anemia responsible for the loss of function of a particular part of the brain was transient. It cleared too rapidly for the disappearance of an embolus or thrombus. In some of these we noted that clinical improvement followed and was concurrent with a rise in blood pressure. In others, we were able to ascertain that the blood pressure level which we first found following the onset of the hemiplegia was less than the person's pressure had been prior to his trouble, and that as he recovered, it again rose. In these it was apparent that cerebral anemia was caused by or associated with a lowered blood pressure.

As a case in point, an attorney from the Middle West was known by his wife to have a high blood pressure. He was energetic and active, and had been working unusually hard and continuously for several months. As a result of the wife's insistence, he agreed to take a vacation and came West. At the end of a three day train ride, he remarked that he felt entirely let down, relaxed and asthenic. In their hotel that night, his wife was awakened by the peculiar character of his

* Read before the Section on Nervous and Mental Diseases at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Langwill, H. G.: Transitory Hemiplegia, with Notes of Two Cases, Scot. M. & S. J., June, 1906, p. 509.
2. Edgeworth, F. H.: On Transitory Hemiplegia in Elderly Persons, Scot. M. & S. J. **19:** 414 (Nov.) 1906.
3. Heard, J. D.: The Significance of Transient Cerebral Crises and Seizures as Occurring in Arteriosclerosis, Edinburgh M. J. **6:** 417 (Nov.) 1910.
4. Osler, William: Transient Attacks of Aphasia with Paralysis in States of High Blood Pressure and Arteriosclerosis, Canad. M. J. **1:** 919 (Oct.) 1911.
5. Allan, G. A.: Arterial Spasm in the Brain Associated with Transient and Permanent Paralysis, Glasgow M. J. **24:** 25 (July) 1910.
6. Russell, William: Intermittent Closing of Cerebral Arteries, Brit. M. J. **2:** 1109 (Oct. 16) 1909.
7. Parker, G.: The Causes of Transient Cerebral Paralysis, Bristol M.-Chir. J. **27:** 15 (March) 1909.
8. Florey, Howard: Brain **48:** 43 (March) 1925.
9. Frank, François: Bull. Acad. de méd., Paris **41:** 565, 1899.
10. Hill, Leonard: The Physiology and Pathology of the Cerebral Circulation, London, J. & A. Churchill, 1896.

breathing and could not arouse him. A physician was called, and he was taken to a hospital. We saw him twenty-four hours later. He was unconscious, had Cheyne-Stokes breathing, and the systolic pressure was 170. In view of the sequence of events leading up to the cerebral circulatory disturbance, it did not seem likely that he could have ruptured a vessel under these conditions of rest, when he had up to a few days before been in a state of exceptional physical and mental activity. His wife did not know what his usual blood pressure had been, though she knew that it was high. We suggested that he had a cerebral anemia, and that the pressure of 170 was probably below the usual pressure. Acting on this suggestion, we had the foot of the bed raised, and he was given large amounts of fluids, brisk rubs, and some caffeine and strychnine. Within from twenty-four to thirty-six hours, the blood pressure gradually rose to 235. With it the unconsciousness disappeared and he was shortly back to his usual health without any relic of the cerebral circulatory disturbance or evidence of permanent brain injury. Correspondence with his home physician developed the fact that for a long time he had had a blood pressure of 245. Many similar histories might be cited in which a lowered blood pressure has caused a cerebral anemia.

With increasing age and with progressing sclerosis and narrowing of the vessels, peripheral arterial resistance increases. For every person there is a blood pressure that is best suited to his requirements, and there are certain variations in pressure which can be tolerated. A certain pressure is required to force an amount of blood through each of the vessels, according to its caliber, which amount will be adequate for the physiologic needs of the tissue supplied. The pressure that is best suited to the needs of a particular person may be termed his optimum pressure. For one, an optimum pressure may be 130. For another with greatly altered vessels, the optimum may be a very high pressure, for anything below that will not drive a sufficient amount of blood through all the vessels. If the blood pressure falls below the person's optimum, the particular vessels which present the greatest resistance to blood flow will deliver the least blood. In them, the blood flow will be slowed and lessened in amount. The circulatory disturbance in the tissue supplied will vary according to the degree of anemia and its duration. Sufficient slowing in the current over some time will produce marked changes. If, however, normal circulation is restored within proper time limits, permanent injury may not have occurred. If normal circulation is not restored, and if the circulatory stasis persists, local conditions in the vessel or in the blood itself may cause thrombosis and a more or less permanent block, regardless of what the general blood pressure may do after that time. It is our belief that this mechanism is sufficient to explain, and that it is the cause of cerebral circulatory disturbances in a certain group. Many causes may be operative in bringing about the lowering of blood pressure. Myocardial weakness may precede faults in cerebral circulation as well as elsewhere. In this group the need for the administration of proper remedies for the heart muscle is obvious.

The surgeon also is often confronted with evidences of cerebral circulatory disturbances in the aged. Following a procedure of some magnitude, with loss of blood or shock and a drop in blood pressure, delayed recovery from the anesthetic may occur. Drowsy and other altered mental states are frequently seen. Factors which are prominent in the production of cerebral anemia in the aged or in those with diseased circulatory systems are the surgical operation itself, loss of blood and shock. Also it is a common practice to conduct the operation, which may be prolonged, with the patient in a head down Trendelenburg position, in which the head is congested. Unfortunately, at the conclusion of the operation the patient is suddenly lowered to a horizontal position, which may be at once changed to a sitting Fowler position in bed. These factors tend to alter the cerebral circulation suddenly and markedly, and to produce a cerebral anemia. It is not uncommon to find the patient's condition suddenly alter unfavorably during this time of change. Careful records of frequent blood pressure estimations, the maintenance of blood volume by sufficient fluids, slow altering of position under observation, and an effort to keep the patient's blood pressure at his optimum, as determined prior to operation, will lessen this risk.

Transient hemiplegias as seen by the neurologist vary greatly in their duration. These are usually of minutes or hours, though all are familiar with those that occur most often at night and clear completely in a short time.

It is common to have transient hemiplegias or transient numbness of one side or an aphasia appear while the patient is at the table during a meal. This occurrence is significant as indicating a connection between the condition of the splanchnic circulation and the cerebral blood supply. Leonard Hill showed conclusively that a general rise of venous pressure caused a rise of intracranial pressure. Dilatation of the splanchnics with a drop of venous pressure causes a drop in intracranial pressure. The phenomenon of rising intracranial pressure during the Queckenstedt test of compressing the jugulars is familiar to all. Compressing the jugulars causes a damming back of venous blood. The pressure in the intracranial veins and in the smaller arteries is forced up and tends to approach the pressure in the larger arteries. In the opposite way, a low venous pressure permits the arterial blood to pass most readily into the venous system by the route of least resistance. The small arteriole, offering the greatest resistance, will transmit the least blood. Fluctuations in arterial pressure influenced by venous pressure can explain cerebral anemias without the necessity of assuming a vessel spasm. Many of these considerations have already been presented in a paper by Inman.[11]

In the experimental features of our work, an analogy has been drawn from the writings of Makins,[12] Sehrt,[13] Brooks,[14] Holman[15] and others between circulatory conditions in the extremities and those in the brain. Makins noted that, when the femoral artery is tied, gangrene of the extremity will often follow. If the femoral vein is tied at the same time, the incidence of gangrene is much decreased. The explanation for this is that after the femoral artery is tied, the life of the extremity is dependent on sufficient arterial blood passing through collaterals and spreading through the arterial bed. If, however, the blood through collateral

11. Inman, T. G.: Cerebral Thrombosis and Abrupt Slowing of the Cerebral Circulation, J. A. M. A. **75**: 1765-1768 (Dec. 25) 1920.
12. Makins, G. H.: Gunshot Injuries to the Blood Vessels, Bristol, John Wright and Sons, 1909.
13. Sehrt, E.: Ueber die künstliche Blutleehre von Gliedmassen und unterer Körperhälfte sowie über die Ursache der Gangrän des Gliedes nach Unterbingung der Arteries allein, Med. Klin. **12**: 1338, 1916.
14. Brooks, Barney; and Martin, K. A.: Simultaneous Ligation of Vein and Artery: An Experimental Study, J. A. M. A. **80**: 1678 (June 9) 1923.
15. Holman, Emile; and Edwards, Muriel E.: A New Principle in the Surgery of the Large Vessels, J. A. M. A. **88**: 909-911 (March 19) 1927.

arteries passes easily into the venous system at a point just below the arterial tie, little or none of it will pass on down to the peripheral arteries of the extremity. Thus, anemia and gangrene follow. If, however, the venous pressure is raised by tying the vein, the short circuiting of arterial blood will not follow and it will distribute itself through the entire arterial bed. Brooks and Martin found that tying the femoral artery alone in rabbits gave an incidence of gangrene of 71.5 per cent. When both the artery and vein were tied, gangrene occurred in only 33.3 per cent. Holman and Edwards found that by tying the common iliac artery and by raising the venous pressure still higher by tying the inferior vena cava above the confluence of the common iliac veins, there was gangrene in only 7.1 per cent. Holman has also shown that when the femoral artery is tied, the arterial pressure in the extremity below the tie is greatly raised by tying the vein and also that the volume flow of blood per unit of time is greatly increased. The degree of rise in arterial pressure and volume blood flow depends on the site of the venous obstruction. The higher the tie of the vein, the greater the increase.

In collaboration with Dr. O. W. Jones, we have undertaken similar experiments on the cranial circulation in dogs. Cerebral anemia has been caused by clamps or ties on the carotids, vertebrals and the two cervical branches on each side which have anastomoses with the cranial circulation. In the presence of a cerebral anemia, certain changes have occurred both in intra-arterial pressure, as measured by a cannula in the cranial end of one of the carotid cannulas, and in the rate of volume flow. These changes, however, have not been comparable to the results obtained in the experiments on the extremities by other workers.

Apparently other factors come into play, as is possible in a closed cavity such as the cranial chamber. Vessel spasm and dilatation may be factors, though this awaits final proof.

CONCLUSIONS

A certain group of persons present transient hemiplegias, aphasias or other indications of circulatory trouble. These are most common in those with greatly thickened and often hard vessels in which spasm, even if possible, is least likely to occur. Many of these circulatory disturbances can best be explained by a fall of the general blood pressure or of the venous pressure below the patient's optimum, and without the necessity of presuming a questionable vessel spasm. Lowering of blood pressure, which is often protective in character, is hazardous.

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ABSTRACT OF DISCUSSION

DR. WALTER J. FREEMAN, JR., Washington, D. C.: The authors are to be congratulated on demonstrating the importance of maintaining an adequate cerebral circulation in cases in which this circulation is threatened or definitely impaired. They are also to be congratulated for having thrown out of consideration one more of those types of accidents which we know as apoplexy. Tying off the jugular vein to reestablish the cerebral circulation sufficiently is possibly worth a trial. However, there are other means whereby the general arterial pressure can be raised, and thus we may in certain instances avoid the necessity of surgical procedures. There are also measures for causing dilatation of the vessels in the brain, particularly, for instance, the use of nitrites. Could not these substances be used, in addition to such possible measures as hypotonic saline solution, to increase the intracranial pressure by means of increased blood supply?

DR. I. LEON MEYERS, Los Angeles: I recall certain instances in which a lowering of the blood pressure and anemia of the brain, which is probably associated with rest, rather favored the production of a hemorrhage than otherwise. A man, aged about 55, strained his back while pushing an automobile. The following day he did not go to work but spent the day in a park. At about 4 o'clock in the afternoon he suddenly developed paraplegia, with a loss of sensation. He was brought into the hospital, and presented a typical picture of a hematomyelia. It appeared to me very peculiar that when the man had rested the whole day, during which time his blood pressure must have been lowered, he developed a hemorrhage instead of improving. In the Los Angeles General Hospital we have had about six or seven cases of late subdural hemorrhages, in which the patient in several instances had a comparatively trivial injury, rested following it, and during rest gradually developed a slow subdural hemorrhage, which increased in severity. In several cases an operation was performed and the patient recovered. In these cases, too, the rest and the lowering of the blood pressure rather favored the production of a hemorrhage than otherwise. I was wondering what the explanation might be. It occurred to me that possibly, as the authors have pointed out in connection with the general increase in intracerebral pressure, in speaking of increased blood pressure we are thinking always of what seems within the vessel that ruptured, and disregard the effect of the pressure outside it. Increased blood pressure increases also the general intracranial pressure. Assuming that the blood vessels are a little harmed either by a cerebral injury or by arteriosclerosis, if the intracranial pressure is great owing to the increased blood pressure, the oozing from the traumatized vessel will gradually stop. On the other hand, when a patient is resting, there is no increased intracranial and intraspinal pressure to stop the slow oozing. This may account for the slow subdural hematomas that have been found either at postmortem examination or at operation, which have developed in the patient, not at the time of his injury, but during his convalescence.

DR. LEWIS J. POLLOCK, Chicago: The efficiency of the arterial blood supply to the brain is dependent on the relation between the arterial pressure and the intracranial pressure, as was shown by Cushing a number of years ago. If the intracranial pressure is increased to a certain point, cerebral anemia ensues, as a result of which there is stimulation of the autonomic blood pressure centers in the medulla, which then raises the general blood pressure so that we may have an ineffectual blood supply to the brain. Does it follow that increasing the intracranial arterial pressure produces a greater blood supply to the brain? Is there any experimental work which will show that if intracranial pressure is raised, the arterial pressure therefore of necessity concomitantly arising, the blood gets to the brain in greater amounts?

DR. HOWARD C. NAFFZIGER, San Francisco: I will answer Dr. Pollock's question first. The rise in intracranial pressure is incidental to the rise in venous pressure. By producing a venous block, the intracranial pressure is incidentally raised. As to what happens, I can only repeat that when a cannula is introduced well up into a carotid which has been tied below, it is in direct connection with the intracerebral circulation. If a brain anemia is then produced by shutting down on all the other cerebral arteries somewhat, we find that there is a certain rate of volume flow as measured by the carotid cannula. Then, if the veins are blocked, we find that the volume flow per unit of time from that cannula is increased, and that the manometric reading in that artery is increased also. In other words, there is a rise in intra-arterial pressure and an increase in the volume of flow per unit of time when the veins are occluded. In regard to the cases of which Dr. Meyers was speaking, we have not taken into account any traumatic hemorrhages. Regarding the use of drugs, Dr. Freeman said, "medical measures cause an increase of blood pressure." We have not used those drugs that elevate blood pressure rapidly, such as epinephrine, because their effects are transient. Apart from patients with myocardial weakness, we have very great difficulty in increasing arterial pressure by any medical means. Strychnine and caffeine are probably

indirectly helpful. We have tried digitalis and strophanthus. With these we had no results, unless there were definite signs of decompensation. I should expect that nitrites would produce an effect which would be the opposite of that desired. Apart from the use of drugs, we have elevated the foot of the bed, given large amounts of fluids, and prescribed a tight abdominal binder, liberal amounts of foods, if these can be taken, and brisk rubs.

PROGRESS OF BREAST FEEDING IN NEW YORK STATE *

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Any one who has followed medical literature in general, and pediatric literature in particular, for the last two decades, must have been impressed with the steadily increasing place occupied by breast feeding in the minds of the profession. Even though much of this enlarging volume of medical attention has been concerned with public health measures rather than with private practice, still there has been a steadily increasing tendency on the part of students of infant health and nutrition to concern themselves with some of the multifarious problems connected with the natural feeding of children, as compared with an earlier (and still altogether too prevalent) tendency to experiment with artificial methods of nourishing babies. And whereas Sedgwick has secured for Minnesota the honor of being the state where this renascence of interest had its origin, through his Minneapolis demonstration of the universal applicability of breast feeding, it has remained for New York State to be the first to apply widely the principles there laid down, not only as a public health measure, but also as a tool to be placed in the hands of the general practitioner and used by him to lower the infant mortality and the infant morbidity in his own private practice. The history of the growth of this interest until now, when it has reached the proportions of a state-wide movement, is worth tracing; for already other states are beginning to study the movement with the purpose of adopting this life-saving measure and applying it to their own infant mortality and morbidity problem.

The first step taken in this state consisted in the repetition of the Minneapolis demonstration, with the thought of determining whether what had been done in the Middle West could be done in the East; and also in order to have a demonstration near at hand, as well as a training school for educating those concerned, in the very definite technic that has been found necessary if breast feeding is to be made anywhere near universal in any community. While the demonstration here was in a general way a reduplication of the western effort, certain changes were made, which were believed to be definite improvements, looking toward the elimination of the friction with the medical profession which had elsewhere been allowed to creep in and prevent the movement from reaching its greatest potentialities. For it was readily realized that no measure for the improvement of public health can get very far that is not generously and genuinely supported by the physicians themselves. As these points have all been developed in the past before this section [1] and the Section on Diseases of Children,[2] it will not be necessary to go into the Nassau County demonstration in more detail at this time. Suffice it to say that almost identical statistics were obtained, thus showing, had any proof been needed, that success in breast feeding has nothing to do with geography.

The next step was made possible by a very fortunate circumstance. It happened by great good fortune that a plan of graduate education of the physicians of the state by their own organization, the state medical society, was just emerging from the experimental stage and entering on a state-wide phase about the time of the conclusion of the Nassau County demonstration. The underlying principle of this graduate education idea was that all education requires for its successful working out a receptive attitude on the part of the student, and that such an attitude can be assured only when the student takes some initiative in the matter. By a happy arrangement, an agreement was entered into between the state society and the division of maternity, infancy and child hygiene of the state department of health, according to which any county medical society desiring instruction for its members in any phase of pediatrics or obstetrics could obtain it by asking the state society to arrange for it, with the understanding that the state department of health would finance it out of Sheppard-Towner funds. This meant that the opportunity was presented of teaching breast feeding to the general practitioners themselves, not as something forced on them by an outside agency, but as part of an educational program asked for by themselves and arranged for by the graduate education committee of their own state society. Another thing that made this teaching especially acceptable was the presentation of breast feeding, not as such, but as the easiest, best and most universally applicable form of infant feeding available. This, of course, is something that cannot be disputed. Infant feeding fits into any pediatric course; in fact, it would be almost inconceivable to plan a course in the care of infants and children that did not cover this very important phase of the subject.

The next step, sometimes coincident with the graduate teaching phase or growing directly out of it, concerns what has come to be called the "daughter demonstration." Immediately following the completion of the original demonstration, it was decided that no further work of the sort should be undertaken, except at the direct invitation of the local unit of organized medicine in the community concerned. The procedure followed then was for a community desiring breast feeding help from this division of the state department of health to have the program committee of its county medical society (or, if a city, of its academy of medicine, which in such cases is made up as a rule of the city members of the county medical society) ask for a speaker on infant feeding, who would especially stress the simplicity and desirability of breast feeding. This might either be in connection with a program of graduate education, as was the case in some instances, or be a single meeting, as part of the ordinary scientific program of the regular stated medical meeting. If the members of the society were sufficiently impressed with the presentation of the subject to want to try the thing out in their own community, some member would propose at the business part of the session that the effort be made, as part of the activities of the society;

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* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Richardson, F. H.: Universalizing Breast Feeding in a Community, J. A. M. A. **85**: 668 (Aug. 29) 1925.

2. Richardson, F. H.: The Breast Feeding Demonstration and the Physician, **87**: 1977 (Dec. 11) 1926.

and the appiontment of a committee of the society to direct the work, and keep it directly under the control of the physicians themselves, usually followed. If this committee wanted help in inaugurating the campaign, as it naturally would, the division of maternity, infancy and child hygiene of the state department of health would send in one or more of its specially trained and experienced public health nurses who had served long enough in the Nassau demonstration to have learned both the possibilities and the difficulties of this highly specialized form of work. The success of the original demonstration had assured an enthusiastic attitude on the part of these nurses. But it had also taught them the absolute necessity of keeping the work definitely tied up with the county society, and under its control; and that the problem was, in the last analysis, a medical rather than a nursing one.

Such a nurse, on arriving at the town to which she had been sent in response to the invitation of the medical society, would at once report to the special committee for instructions. If her advice was asked, as it usually was, she would suggest a canvass of the membership of the society, and of the local nurses and the hospital authorities, to be made by herself. This canvass has been found most valuable. It acquaints physicians who may have been absent from the medical society meeting with what is being done; it gives the committee the definitely stated attitude of every individual physician and nurse in the community toward the new activity; and it gives an opportunity to correct any misunderstandings or misapprehensions, such as can so easily arise, as to the purely medical nature of the enterprise, and the strictly medical supervision that is to be exercised throughout. It also gives opportunity for such men as may desire to know more about the experiences of other communities to ask questions that they might not have cared to ask at the public discussion. Best of all, it gives the committee and the nurse the very necessary information as to what action each physician wants taken with his own cases; and it allows the nurse the golden opportunity of letting the physician realize that any action that she may take is to be in accordance with his wishes; in short, that she will not make contact with any of his patients at all unless he so desires, and then only as his representative, who will carry out his wishes and orders, exactly as his own private nurse would do.

As the results of these "daughter demonstrations" have been reported on and commented on elsewhere,[2] it is unnecessary to speak further of them here except to say that the close relationship maintained with the local medical personnel has made possible even better results and more flattering statistics than were possible in either the classic Minneapolis demonstration, or the initial New York demonstration in Nassau County. Further than this, it will readily be understood that the permanence of such results—the chief desideratum in any public health movement, and the one hardest to assure after the special machinery of the demonstration has ceased—is assured; for the individual physician who has once learned breast feeding goes on using it, not as a matter of duty toward some public health movement, but simply because it gives him results. Further than this, the nurses, and especially the hospital training schools of the locality, having once taken their cue from the physicians, will continue their advocacy of breast feeding as a matter of routine. That such a routine is immeasurably better than the more usual routine, according to which it is notorious that more babies than not start on the toboggan slide toward artificial feeding before they leave the maternity hospitals, needs little elaborating in order to convince the thoughtful student of infant mortality and morbidity.

We are now entering on a new phase of the movement, which is one that seems to justify the essential soundness of the idea and gives great promise of success. This is the inauguration, on the part of individual public health nurses in different portions of the state, of little centers of breast feeding activity, not as formal demonstrations of public health effort, but simply as part of their routine work and in connection with their other duties as public health nurses in their own communities. While it is noteworthy that those women who were fortunate enough to pass through the training in Nassau County (which, owing to the cooperation of the director of the division of public health nursing, Miss Kuhlman, was the case with practically every nurse who entered the service of the state department of health during the life of the demonstration) have been among the most enthusiastic starters of this phase of individual work, it is also true that some of the very highest type of work has been done by those who have learned the technic elsewhere in the state. At a recent meeting of the nurses of the state to discuss this very problem, most interesting and enthusiastic reports were received from some of those who had already begun this work on an individual basis. The following paragraph is quoted from the report of Miss McGarry:

> It is not difficult to start a breast feeding campaign, where there are two or three nurses in a community, by doing it in connection with their general work. Accurate record keeping is quite important, to find out what has been accomplished. This can easily be done by securing information from each mother regarding the breast feeding of the older children in each family visited and recording it on the back of the index card or on the family folder which has been furnished by the division of public health nursing, state department of health, for general public health nursing, or the family folders furnished by the division of maternity, infancy and child hygiene; and also by obtaining accurate records of the breast feeding of the babies at the present time, and comparing the former figures with the present breast feeding work. This gives a very good idea of what has been accomplished after a certain period of time.

Some interesting corollaries have come to light in the wake of the broad principles that have been followed. The first is that, in order for this work to be permanent, it must be embarked on by the physicians of the community; otherwise it will be only transitory —effective only during the life of the actual demonstration. This can be witnessed in most of the localities in which such demonstrations have been staged in the past in other parts of the country.

The second is that, whereas the participation of many physicians in the community is desirable, it usually happens that it is due to the energy and efforts of some *one man* in the town that the work is actually prosecuted with the zeal that alone will make it "go." A small medical nucleus, in other words, suffices; but that nucleus, small as it is, is indispensable for the best results.

The third is the discovery that a breast feeding demonstration makes an excellent platform on which organized medicine and the health department can do a joint piece of work, to the furtherance of a better mutual understanding than has previously been possible.

The fourth is the rather interesting experience that whereas the general practitioner usually welcomes the new teaching with real enthusiasm, the pediatrician is apt to be harder to convince. In the smaller communities, the obstetricians have been more enthusiastic in welcoming the breast feeding propaganda than they have in the larger cities, where the proportion of babies leaving the maternity hospitals with artificial feeding already established is, as is well known, shockingly high.

The fifth is the somewhat unexpected experience that wherever a breast feeding demonstration comes, the use of the proprietary foods and condensed milk for such babies as are artificially fed, drops to a remarkably low level; and the use of cow's milk in some form or other rises correspondingly.

The sixth is the fact that it has been found possible thus to get for breast feeding the enthusiastic support of the trained nurses in the community—one of the most difficult things to accomplish, as many workers can testify. The fact that the breast feeding nurse has always been made welcome at the hospitals, and has been able there to enlist the active and intelligent interest of the nurses in training, speaks volumes for the permanence of the movement.

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MIGRAINE *

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It is with some hesitation that one attempts to add to the literature on a subject about which so much has already been written and about which so little is actually known. But when one is confronted almost daily with patients complaining of migraine and finds that only in the exceptional case has any attempt been made to establish a rational therapeutic regimen, the treatment having been limited, as a rule, to the relief of the immediate attack, one feels that any suggestion is worth while which may lead to a method of treatment that will give more satisfactory results both to the patient and to the physician.

The apparently careless attitude of the physician toward migraine may possibly be explained in several ways: No dire consequences are associated with the disease, and therefore the preservation of the patient's general health does not demand that the attacks be prevented; the attacks usually cease later in life; and finally, since the cause of this disease, if it may be so termed, is still unknown, with few exceptions the many forms of treatment which are advised are necessarily empiric, and in this day of specific diagnosis and specific therapy empiric methods do not rouse enthusiasm on the part of the physician.

During the last three years, in all cases of chronic migraine we have instituted a definite therapeutic regimen which has given very satisfactory results. Although a definite pathologic condition of the abdomen cannot always be demonstrated in cases of migraine, we have based the treatment in all cases on the assumption that such a condition is present, and the results have been as satisfactory in those cases in which abdominal trouble was not evident as in those presenting definite symptoms of abdominal disease.

The literature concerning migraine may, for the sake of brevity, be divided into four main groups:

1. Articles that deal with the diagnosis and symptomatology of migraine, including articles dealing with special features of the disease, such as sensory aura, ophthalmic symptoms and abdominal symptoms. This phase of the subject has been fully discussed, and it is unnecessary to enlarge on it here.

2. Articles that deal with the pathology of migraine. These are for the most part purely theoretical explanations and nothing definite is known concerning this phase of the subject.

3. Articles dealing with the etiology of migraine. The ascribed causes are legion, and it is evident that no one cause can be accepted as the sole etiologic factor. I should like to call especial attention to an article by Chiray [1] on biliary stasis as an etiologic factor, and one by Duval [2] on duodenal migraine.

4. Articles that deal with treatment. As in the case of any disease for which there is no specific treatment, a wide range of therapeutic methods are proposed, as one may see by reading the titles of the articles on the subject in any number of a medical index.

Duodenal migraine has been discussed rather frequently in French medical literature, and the importance of headache as a symptom of chronic duodenal ileus has been repeatedly emphasized. In 1926, Higgins [3] also directed attention to this symptom of chronic duodenal ileus. In fact, it was the relief secured by patients who suffered from typical migraine when the stasis of a definitely dilated duodenum was relieved by duodenojejunostomy that first suggested the plan of treating all patients with chronic migraine by the institution of a regimen that would relieve stasis in this portion of the intestine, even though such stasis could not be demonstrated.

Migraine is a syndrome in which heredity is probably the most important factor, but some slight organic disturbance must be the immediate exciting factor; and while many other conditions, such as nasal trouble, a refractive error or nervous exhaustion, are very important contributing factors in the etiology of migraine, I have come to regard duodenal stasis as of equal, if not of greater, importance. This point of view is supported by various observations as to both the symptomatology and the results of treatment in cases of this type, of which the following are perhaps the most striking:

1. Patients in whom migraine is associated with vomiting frequently give the very suggestive information that they continue to vomit until a dark green, bitter bile is eructated, after which they are almost immediately relieved. This information is given spontaneously by so many patients that it would seem reasonable to believe that this bile is playing some rôle, probably that of a toxin, in the production of migraine. It is evident that this bile must be regurgitated from the duodenum, and one would assume therefore that there must be a stasis in this region, for ordinarily the duodenum empties itself rapidly—in the case of a barium meal, too rapidly to allow a roentgenogram of the organ to be made. This vomiting of bile has given rise to the lay term "bilious headache," and it is com-

* From the Cleveland Clinic.
* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Chiray, M., and Triboulet, F.: Rôle of Stasis in Gallbladder in Migraine, Presse méd. **33**: 313-315 (March 11) 1925.
2. Duval, P., and Roux, J. C.: Duodenal Migraine, Arch. d. mal. de l'app. digestif. **14**: 74-79 (Jan.) 1924; abstr. J. A. M. A. **82**: 1303 (April 19) 1924.
3. Higgins, C. C.: Chronic Duodenal Ileus, Arch. Surg. **13**: 1-42 (July) 1926.

monly believed that the biliary system is responsible for the so-called sick headache or migraine. In fact, because of this association, many gallbladders have been removed or drained without, however, resultant relief from the headaches.

It seems reasonable to suppose that the relief which follows the vomiting of duodenal material is evidence of duodenal stasis and toxicity.

2. During recent years the Lyon method of draining the gallbladder has been very popular, and much has been written about the value of this procedure both as a diagnostic and as a therapeutic agent, especially in diseases of the gallbladder; but of particular significance is the fact that it has been peculiarly beneficial as a therapeutic agent in cases of bilious headaches, of periodic bilious spells and of clear-cut cases of migraine. A careful analysis of the cases that have come under my observation in which the patients state that they have secured the most satisfactory results from this treatment has shown them to have been cases of migraine and of stasis of the upper intestinal tract, and not definite cases of biliary disease.

This observation in itself would seem to justify the supposition that the relief obtained by the artificial drainage of the duodenum is evidence of duodenal stasis and toxicity.

3. Another method by which the duodenum can be drained is by flushing it with a saline laxative, usually preceded by a preparation of mercury. This has long been a recognized and successful method of treating chronic migraine, but many patients who know of its efficacy are loath to use it on account of the many warnings that have been given concerning the use of mercurial preparations. The presence of duodenal stasis and toxicity is not so well established in these cases, as elimination is secured not only from the duodenum but also from the whole intestinal tract; but, on the other hand, any laxative which acts chiefly on the large intestine does not give the same results as those which follow the use of mercury and a saline, whose primary action, as stated above, is on the upper intestine.

4. Another method for the relief of duodenal stasis is duodenojejunostomy, and the evidence of stasis which is obtained in this way is, of course, the most conclusive. In the article by Higgins, seventeen cases are reported in which this operation was performed to relieve a definite dilatation of the duodenum resulting from obstruction. In thirteen of these cases the patients complained of migraine headaches, and with the exception of two all were relieved of this symptom. In these two cases it was believed that the anastomosis did not allow complete dependent drainage and that a pocket had formed in which stasis was still present.

In addition to the evidence that is provided by the very favorable influence of these various methods for the relief of duodenal stasis, the relation of migraine to stasis may be deduced indirectly from the effect on the disease of two other conditions which would naturally affect the mobility of the duodenum; namely, visceroptosis and periduodenal adhesions.

Since the first portion of the duodenum is slightly mobile, while the second and third portions are fixed and since the third, in addition, is crossed by the superior mesenteric artery, it is easy to see that the sagging which occurs in visceroptosis would tend to produce a pocket and at the same time might occasion some obstruction by pressure on the artery. The majority of the victims of migraine are thin, nervous, visceroptotic individuals, and the frequency and severity of the attacks bears an almost direct relation to the degree of abdominal ptosis and relaxation present in the individual case. If a patient who is suffering from a mild case of migraine becomes chronically exhausted and loses weight, so that the stasis is increased, the migraine is greatly aggravated; on the other hand, rest, gain in weight, and general improvement in the visceroptotic condition have a very beneficial effect. I have seen cases in which occasional mild attacks of migraine steadily progressed until they became almost continuous, and then diminished in frequency and severity under treatment which was directed solely to the cure of the visceroptosis. It can be argued, of course, that the lessening of the migraine in these cases was due entirely to an improvement in the general and nervous condition, but nevertheless this observation is also in entire accord with the assumption that the improvement in these cases is due, in part at least, to the diminution or cure of duodenal stasis which results.

Adhesions around the duodenum are often present in cases of this type because these patients are often subjected to exploratory operations. When these adhesions are such as to produce distortion of the duodenum, as evidenced by roentgen-ray examination, the migraine was usually made much worse by the operation, and in such cases it is very difficult to secure any response to treatment. On the other hand, I have seen cases in which the migraine has completely disappeared after operations which did nothing more than release adhesions in the right upper quadrant.

In a fair percentage of cases of migraine, a disturbance of the movement of the intestinal contents can be demonstrated by the roentgen ray. Occasionally one finds a widely dilated duodenum, sometimes almost as large as the stomach, in which the barium remains for some time before being expelled. This type of case is rare, however, and more frequently there is only a to-and-fro movement of the barium in the duodenum which may continue for a minute or so before the contents are expelled; or the passage of the barium, which normally moves along quite rapidly, may be decidedly retarded. These phenomena will not be visible unless the stomach is manually compressed so as to force its contents into the duodenum. In order to determine the degree of dilatation that is present in the duodenum, it is necessary to obstruct the passage of fluid from it into the jejunum and then to force barium into it. In this way, its size may be determined by the amount of distention that takes place It is true that these duodenal conditions are seen in many cases in which there is no history of migraine, but this may be because of lack of susceptibility or lack of a hereditary tendency to migraine. Again, as has been said before, stasis cannot be demonstrated clinically in all cases of migraine, but a functional stasis must have existed for a long period before it can be shown by the roentgen ray, and the beneficial results obtained by treating all cases of migraine with some form of antistasis treatment, on the assumption that this condition exists, strongly supports the view that stasis is present in many cases in which no evidence of it is given by the roentgenogram.

It is a simple matter to offer a logical explanation for the production of migraine by stasis. It has long been known that when a pouch is formed in the duodenum the duodenal contents become toxic. The periodic production of migraine may be a cumulative effect of this toxicity. It has also been shown that incompletely

broken-down food molecules, especially of proteins, can be absorbed from the duodenum and can cause anaphylactic phenomena; and in recent years the allergic theory of the causation of migraine has received increasing support. Although definite sensitization could not be demonstrated, beneficial results were obtained by nonspecific protein immunization. In a recent article Vaughan [4] has reported on a group of patients who were mildly sensitive to specific foods and who secured relief from migraine by abstaining from these foods. In either case, whether the migraine was the result of a specific allergic phenomenon or was caused by a toxic action of incompletely digested food, the effect would be greatly increased by a delay in the passage of the food through the upper intestine. The power to absorb undigested material may vary greatly in different persons, and this may account partly for the varying susceptibility to migraine.

Assuming stasis in the duodenum and the disturbing consequences resulting from it to be consistently a factor in the production of migraine, the treatment to be described has been instituted for all patients with migraine who have come to us for treatment during the last three years. Needless to say, attention has also been directed to other conditions that might bear on the problem, such as eyestrain or foci of infection.

The results of this treatment have been beneficial in all cases in which it has been conscientiously carried out. It is this variable factor, of course, which makes it almost impossible to compile statistics unless one relates in detail each individual case. Eighty of my personal cases were selected for special study, and an analysis of these cases shows that the most marked improvement was obtained in those in which the patient vomited during the attacks, the vomiting being much more easily relieved than the headache. In cases in which exploratory operations had been performed, it was more difficult to relieve the migraine. In four cases of periodic vomiting and headache in patients over 60 years of age, who had had typical migraine in early life with a cessation of attacks for from ten to fifteen years, the symptoms were completely relieved. In the great majority of cases of simple migraine, both the severity and the frequency of the attacks were decreased, the degree of improvement corresponding to the faithfulness with which the patient had carried out the treatment. There is always a tendency for patients to grow careless as their condition improves, and they must be warned of the possibility that the symptoms may recur. In the few cases in which the patients were not benefited, it was found either that they had not been willing to cooperate or that social conditions had made cooperation impossible.

Regulation of the diet is a very important part of the treatment in these cases, and this phase of the problem has been well discussed by Brown.[5] Carbohydrates, especially white bread, wheat cereals and potatoes, and eggs and milk, were always eliminated from the diet. Sensitization tests were performed in a few cases, but no help was obtained from them. Occasionally the patient could furnish some information as to the effects of special articles of food, but usually such information is unreliable. On account of the undernourished condition of many of these patients, frequent feedings and a high fat diet were urged.

Exercise is beneficial in all types of cases, but in those in which visceroptosis and poor posture are present a regular systematic course of exercises must be employed to correct this condition. Unless exercises are used in conjunction with abdominal supports, the results of treatment are poor. Some of the best results which we have obtained have been in cases in which visceroptosis was corrected by the proper exercises.

The relief of constipation is essential for success, and every effort should be made to overcome it without the use of cathartics. General anticonstipation methods were employed to accomplish this end, enemas being advised as a substitute for cathartics. In order to flush the duodenum, no matter how well the bowels functioned, a calomel and saline laxative was prescribed to be taken on the first day of each month, and in severe cases a saline laxative alone was prescribed to be taken every week or every two weeks. In occasional cases a very mild saline was taken regularly every morning for several months.

Nervous exhaustion and other nervous factors must be relieved, for the effect of these conditions on the intestinal tract must play some part in the production of the stasis. Ten hours of rest each day and, in some cases, a month in bed was advised. Phenobarbital (luminal) or a bromide was used at the beginning of treatment in all cases in which the patient was very nervous, but it was discontinued as soon as possible.

Special measures, such as the Lyon duodenal drainage were employed only in obstinate cases. In these cases the frequency with which the treatments were given depended on the frequency of the attacks, as we tried to institute drainage just prior to an attack. This is a very efficacious method of treatment, and the patients can learn to carry it out very easily for themselves, but as a routine treatment it is difficult on account of the discomfort entailed.

As has already been mentioned, in cases in which the duodenum was obviously dilated and relief could not be secured otherwise, operation was performed and drainage secured by a duodenojejunostomy. No other abdominal operations were advised, except in two cases in which abdominal adhesions were released. One of these was a case of tuberculous peritonitis with general adhesions, and no relief was obtained other than that secured by general measures. In the other case the releasing of a band of adhesions in the right upper quadrant completely relieved the headaches.

We have not used any other drugs or any specific protein therapy in the treatment of these patients.

CONCLUSION

Stasis in the upper intestinal tract plays an important part in the induction of attacks of migraine, and treatment should be directed toward the relief of this condition in all cases of this disease, particularly before an exploratory operation is advised.

Euclid Avenue at Ninety-Third Street.

4. Vaughan, W. T.: Allergic Migraine, J. A. M. A. **88**: 1383-1386 (April 30) 1927.
5. Brown, T. R.: Rôle of Diet in Etiology and Treatment of Migraine and Other Types of Headache, J. A. M. A. **77**: 1396-1400 (Oct. 29) 1921.

ABSTRACT OF DISCUSSION

DR. JOHN A. LICHTY, Clifton Springs, N. Y.: The subject presented by Dr. Hartsock is an important one because of the fact that migrainous headaches are so prevalent and the treatment is so baffling. Dr. Hartsock has attempted to show that there is a form of migraine which has a rational treatment and which if carried out will bring about desirable results. Migrainous headaches are frequently overlooked and not thoroughly analyzed in taking the history of a patient. This is very unfortunate, because the patient with migraine is

frequently incapacitated and, at times, is unable to hold a position which otherwise he might hold. More than this, the determination of whether a patient has or does not have attacks of migraine helps to classify that patient, because a migrainous patient belongs to a type by himself, and when it is once determined that the patient belongs to this type, a great deal of information is thus obtained. Migraine has been compared with epilepsy, largely, I believe, because the cause of either is not known and treatment for either is usually unsatisfactory. Eight or ten years ago, while reviewing the histories of about 700 cases of migraine and about seventy-two cases of epilepsy, I found that in ten patients of these two groups both conditions existed. If by abdominal migraine Dr. Hartsock means migraine with abdominal aura, I agree that the title is well taken. If, on the other hand, he means, as I believe he does, that migraine is due to disease or disturbance of the abdominal organs, I take issue with him. Among the 700 cases of migraine and the seventy-two cases of epilepsy, I found only a small number in which I could make the diagnosis of duodenal ileus. The vomiting of bile is common in most cases of migraine if the attack is severe, or if vomiting is continued long enough to produce a regurgitation of bile from the duodenum into the stomach. This, however, is not a positive diagnostic sign of duodenal ileus. Migraine is a hereditary disease. Only certain types of people have it. It seems to be consigned largely to the more intelligent and intellectual. I have seen very few cases among the Slavic race. I have seen very few in persons who came from the shores of the Mediterranean. I have seen many, especially in women, in patients who came from the South. The different way in which these two classes of people live may explain the difference in the incidence. I agree perfectly with Dr. Hartsock that in the class of patients he has described an increase in weight, associated with a normal deposit of fat in the abdominal cavity, together with a properly fitting corset, go far toward correcting the difficulty which he described. In some cases, a duodenal jejunostomy may be indicated.

DR. A. F. R. ANDRESEN, Brooklyn: I am very glad that Dr. Hartsock mentioned allergy in connection with migraine. We have gone through the period of treating our patients very much as he has treated them, and feeling in the beginning that perhaps occasional ones were due to food allergy, but in recent years we have come to the conclusion that practically all cases of migraine are allergic manifestations. We must remember that allergic manifestations do not occur alone in the nervous system but that they are seen also in the gastro-intestinal tract and therefore that the association of gastro-intestinal symptoms with the nervous symptoms may be quite common. We also know that allergy is hereditary. It has been worked out and found to conform to the mendelian laws of heredity. We know that in the gastro-intestinal tract mucosal manifestations of allergy, and also neuromuscular manifestations, may occur. So far as the diagnosis is concerned, most persons, when they speak of allergy, speak about skin protein sensation tests, as if that were the only way of making a diagnosis in allergy, and then say that the tests were not conclusive. I do not believe that the skin protein tests are at all conclusive; they merely indicate the proteins that may be causing the sensitization. The final test of food allergy is to give the suspected food; see whether a reaction occurs; whether it disappears on withholding the food, and whether it recurs when the food is given again. We must also remember that in addition to food, certain emanations may cause allergic manifestations, and also that occasionally there are bacterial protein sensitizations which may account for the patients who are relieved by removing certain focal infections. In addition to the cases mentioned, in which there is a mistaken diagnosis of migraine, there is a unilateral sinus infection which causes a similar one-sided headache. So far as the treatment of allergy in general is concerned, and also the treatment of migraine, it is important to avoid the food or foods which are causing the attacks. Cathartics or colon irrigations merely eliminate the food if it has been recently taken, and therefore will tend to shorten the attack. We also, at times, get quite a marked foreign protein reaction from certain operations, and in some cases reported, such a foreign protein reaction may have accounted for the relief of the migraine following operation.

DR. ZACHARY SAGAL, New York: Good results are often obtained by desensitizing the patient by giving him peptone from half an hour to an hour before his meals. I have had several strikingly good results from it. Peptone given in doses of 0.5 Gm. from half an hour to an hour before meals will often bring about very beneficial results.

DR. C. L. HARTSOCK, Cleveland: In regard to the frequency of migraine and duodenal ileus, we had fifty-five cases of duodenal ileus to thirteen of migraine. However, I feel that there are many cases of duodenal ileus that go unrecognized because the roentgenographic examination is so inconclusive. While this paper was written especially in regard to those cases of migraine which present various forms of abdominal manifestation, the same treatment has been carried out in all cases of migraine with as much success as in those which presented abdominal manifestations.

VALUE OF INTRAVENOUS INJECTIONS OF DEXTROSE

DURING RADIATION TREATMENT OF MALIGNANT DISEASE*

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AND
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The beneficial effects of intravenous injections of dextrose in conjunction with the radiation treatment of malignant disease were suggested to us in a personal communication from Professor Holzknecht of Vienna in March, 1926.

It was believed by Professor Holzknecht and his associate, Dr. Mayer, that tumor tissue seemed to be rendered more sensitive to radiation when the latter was combined with the intravenous injections of a hypertonic solution of dextrose, and that the clinical improvements were especially striking in those cases which were found to be refractory to radiation alone. It was further observed by them that the intensity of the so-called constitutional effects of radiation, or radiation sickness, was greatly diminished or prevented. He gave us these suggestions so that we might make further investigations along the same line.

Dr. Ernest G. Mayer, working under the direction of Professor Holzknecht, gave the first account of his experience in an address delivered at the seventeenth annual session of the Deutsche Roentgengesellschaft, held in Berlin, April 11, 1926. Subsequently he[1] reported his observations on the first fifty cases. The patients were irradiated in the usual manner. Before each irradiation an intravenous injection of 10 cc. of a 10 to 50 per cent dextrose solution, usually 33 per cent hypertonic, was given.

He makes no attempt at a statistical comparison of the patients under radiation treatment who received dextrose and those who did not receive dextrose, but from his general observations he states that in cases which seem to be almost complete failures from treatment by radiation alone, there is a prompt and almost permanent beneficial effect when dextrose injections are combined with radiation treatment. He further states that the action of the injections in accelerating

* Read before the Section on Radiology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Mayer, E. G.: Combined Treatment of Carcinoma with Roentgen Rays and Intravenous Injections of Dextrose, Radiology 7: 14 (July) 1926.

and accentuating the effects of the roentgen rays is more striking when the carcinoma is naturally susceptible to the roentgen rays.

Mayer's basis for these investigations has been the general biologic and clinical observations, and the conclusions of Freund and Kaminer,[2] Russell,[3] Warburg[4] and Silberstein,[5] all of whom have demonstrated the close relationship of tumors to carbohydrates. Mayer[6] in his third report, including eighty-four cases, states that 25 per cent showed improvement with the combined treatment of radiation and dextrose. We find that there is a great variability in the response to radiation of similar types of carcinoma, in different individuals under apparently like conditions, i. e., of age, sex, weight, and duration and location of growth. Just what factors render one patient more susceptible or sensitive to radiation than another has been a matter of extension investigation, histologically, biologically and chemically, but has not yet been determined.

The scientific evidence to date indicates that the effect of radiation is a direct one either on the malignant cells or on the surrounding tissues. Clinical observations indicate a selective effect on some types of tumors, but not on all. According to Ewing,[7] these observations were the basis of formulating the first law of radiation therapy, commonly known as the law of Bergonié and Tribondeau, which may be broadly stated as follows: Tumors that are composed of rapidly multiplying cells, especially those of embryonal type, and particularly those of the lymphoid group, are highly susceptible to radiation, and in such ratio as the characters mentioned are developed.

Anything that will render malignant tissue more susceptible to radiation or "radiosensitive" should receive consideration, and every detail should be weighed and tried with unbiased judgment but with critical research. The rationale of this study of dextrose injections combined with radiotherapy, therefore, is based on the wide experience of the use of dextrose in general medicine, as shown by the voluminous reports of excellent results from its use in a great variety of conditions. Enthusiastic reports in infectious diseases, chiefly pneumonia, have been described by Litchfield,[8] John,[9] and Wells and Blankenship.[10] Dextrose injections in sepsis are recommended by Baradulin.[11] Improved clinical results have been obtained from the intravenous injections of hypertonic dextrose solution in syphilis and gonorrhea to such an extent that the effects have been regarded as excellent provocative measures by Scholtz, Richter and Steinberg,[12] and Cheinisse.[13] Stejskal[14] reports definite improvement in many cases of hyperthyroidism from hypertonic dextrose injections. The use of sugar in postoperative acidosis, with nausea and vomiting, is recommended by Valk[15] and by many others, and Goetsch[16] has reported its advantages, particularly in the postoperative acidosis of thyroid disease. Its use in cardiac cases, particularly for improvement of muscle tone and edema, has been reported by Budingen,[17] Korbsch[18] and Klewitz and Kirchheim.[19] Litchfield[20] concludes that dextrose is preferable in cases of danger from acidosis, inanition, and all toxic states, while Porter, Morris and Meyer[21] and Marriott[22] recommend it in all nutritional disorders when need for food is imperative. Thalhimer, Raine, Perry and Buttles[23] report that if insulin is mixed with dextrose solution and given intravenously there will result a greater and more rapid removal of sugar from the blood than when insulin is given alone subcutaneously. They also noted that there is a rapid decline of the sugar level when intravenous injections of dextrose alone are given. Jorgensen[24] made the same observation and found the drop to be as much as from 20 to 30 per cent below the original level. These investigations show the varied beneficial effects that have been observed in disordered metabolism.

In cases of cancer a retarded elimination of blood sugar has been shown by Foerster and Forster[25] and confirmed by the experiments of Friedenwald and Grove.[26] Silberstein, Freud and Révész[27] found not only that the blood sugar content was relatively high in inoperable cancer but that insulin had comparatively little effect in diminishing the blood sugar content in such cases even when the diet was reduced in carbohydrates. Piccaluga and Gioffari[28] found that insulin delayed the development of Ehrlich adenocarcinoma tumors grafted in mice, and that the combination of insulin and dextrose showed similar results. The Coris[29] as well as others find large amounts of lactic acid (a decomposition product of sugar) in the blood of both animals and human beings bearing malignant disease, but they state that other investigators have failed to find this evidence.

Recently, tumors have been studied in connection with the blood sugar content. Warburg, Wind and Negelein[30] have shown that the sugar content of the blood taken from the vein of tumors is less than half that of the arterial blood. They estimate that tumors need about 76 per cent of the dextrose for fermentation and only 24 per cent for oxidation. Their experiments

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5. Silberstein, F.: Wien. klin. Wchnschr., 1925, quoted by Mayer (footnote 1).
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8. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, J. A. M. A. **71**: 503 (Aug. 17) 1918.
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10. Wells, C. W., and Blankenship, R. C.: Intravenous Injections of Hypertonic Dextrose Solution in Influenzal Pneumonia, J. A. M. A. **74**: 75 (Jan. 10) 1920.
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12. Scholtz, Richter, and Steinberg: Klin. Wchnschr. **1**: 791 (Sept. 2) 1902.
13. Cheinisse, L.: Presse méd. **30**: 933 (Oct. 28) 1922.
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23. Thalhimer, William; Raine, Forrester; Perry, Margaret C., and Buttles, Jane: Effect of Injections of Dextrose and of Insulin and Dextrose on Blood Sugar, J. A. M. A. **87**: 391 (Aug. 7) 1926.
24. Jorgensen, S.: Intravenous and Oral Technic of Glycemia Test, Acta med. Scandinav. **65**: 116 (Dec. 10) 1926.
25. Foerster, A., and Forster, A.: Blutzuckerspiegel und Carcinom, Klin. Wchnschr. **4**: 1540-1543 (Aug. 6) 1925.
26. Friedenwald, J., and Grove, G. H.: Am. J. M. Sc. **163**: 33 (Jan.) 1922.
27. Silberstein, F.; Freud, J., and Révész, T.: Blutzuckerspiegel und Carcinom, Klin. Wchnschr. **4**: 2252 (Nov. 19) 1925.
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indicate that dextrose is essential for the growth of tumor cells, and that in its absence growth is arrested even under aerobic conditions. Warburg [31] concluded from experiments that cancer cells not only oxidize dextrose but also split it without oxidation to lactic acid, in this manner resembling an aerobic lactic acid bacillus. Warburg [32] maintains that normal cells do not produce lactic acid unless their supply of oxygen is limited. Tumor cells produce lactic acid when the medium is saturated with oxygen, the tumor behaving with regard to its metabolism like an asphyxiated normal cell. Relative to the same phase of the subject, Rodini [33] found that sugar injections accelerate the growth of the precancerous epithelial proliferations induced on the ears of tar painted rabbits. These conclusions of Warburg would seem to us to indicate the advisability of reducing rather than adding sugar in the treatment of cancer.

We have made clinical observations in 111 cases during the past year. Of these 105 were cases of malignant disease and six were not malignant. These benign cases were included because we decided to study the effects of dextrose in preventing or diminishing the so-called, constitutional reactions or radiation sickness. Normal blood sugar is present as dextrose (*d*-glucose). For commercial purposes, dextrose is generally made from starch by hydrolysis, with subsequent purification. The great number of patients receiving daily injections necessitated a large stock of dextrose, so we made our own preparations in fresh batches every day.

We used four different dextrose preparations: hypertonic dextrose U. S. P., 50 per cent, supplied in sealed ampules from two different manufacturers, and a German preparation which was said to be especially efficacious because it is produced from grape sugar. However, the majority of the injections were made from freshly prepared dextrose, 33 per cent, made daily in our own laboratory, under the direction of Dr. Gordon Saxon. No appreciable difference in the clinical value of these preparations was noted by us.

Some constitutional reactions have been reported from sugar medications, i. e., chills, fever and sweats, which were ascribed by Williams and Swett [34] to an acidity resulting from a chemical alteration in sterilization. Pendleton [35] believes that these reactions are due to an agglutination of the red blood corpuscles when 5 and 10 per cent dextrose solutions are used, but the agglutination was greatly reduced by using definitely hypertonic (40 per cent) solutions of dextrose. An extra precaution may be taken by adding sodium chloride (from 0.1 to 0.2 per cent) or dibasic potassium phosphate (from 0.1 to 0.2 per cent), or by rendering the solution slightly alkaline (two hundred and fiftieth normal sodium hydroxide).

In none of our cases was there a single instance of any reaction that could be ascribed to the use of dextrose. Up to Nov. 1, 1926, 1,044 injections were given. The character and location of the disease in 111 cases were as shown in the accompanying table.

Radiation treatment according to the disease, the extent of involvement, and the location and condition of the patient was given as follows: daily treatments; every second day; every third day; twice a week, and, in some cases, once a week. In the majority of instances high voltage (200,000 volts) roentgen rays were used. In some of these cases, treatments were given with the low voltage (100,000 volts) roentgen rays, so that our conclusions are not drawn simply from high voltage work.

In advanced pelvic and mouth cases, continuous highly filtered radium applications ranging in total doses from 1,000 to 15,000 mg. hours were used. In every case in which it was possible, the radiation was brought up to points of "saturation," as previously described by Pfahler.[36]

Character and Location of Carcinoma

	Cases
Carcinoma of breast (postoperative)	4
Carcinoma of breast inoperable rec. gland metastasis	10
Carcinoma of breast inoperable rec. gland and bone	7
Carcinoma of breast (primary)	6
Carcinoma of breast (primary) plus bone metas	5
Carcinoma of stomach	3
Carcinoma of rectum	3
Carcinoma of larynx (advanced)	6
Carcinoma of pharynx (advanced)	3
Carcinoma of tonsil	8
Carcinoma of bladder	2
Carcinoma of tongue	8
Carcinoma of cheek	4
Carcinoma of ovary	3
Carcinoma of cervix (inoperable)	7
Carcinoma of colon	1
Carcinoma of vulva (epithelioma)	3
Carcinoma of parotid	1
Carcinoma of penis	1
Carcinoma of prostate	1
Carcinoma of lip	2
Sarcoma of uterus	3
Sarcoma of testis	1
Mediastinal tumor (lymphosarcoma?)	1
Lymphoblastoma	6
Melanotic sarcoma	3
Leukemia	2
Uterine fibroid	4
Mastitis	2
Rodent ulcer of face	1

Intravenous injections of 10 cc. of a hypertonic dextrose solution (from 33 to 50 per cent) were given before the roentgen-ray or radium treatment. In a group of cases, the injections were made during the radiation treatment, and in another group the administration was immediately after the treatment. After the second or third injection the dose was increased to 15 cc. and rapidly brought up to 20 cc. In a few cases, 25 cc. was given at one injection. In several instances, daily injections were given from five to six days in succession after prolonged irradiation (covering a continuous period of forty-eight hours).

Two of the patients were diabetic. One was an advanced recurrent metastatic case of carcinoma of the breast with spine metastasis, in which no dietetic or insulin treatment was given because the patient lost confidence in everything and begged not to be annoyed. The second patient had a recurrent parotid tumor, and was on a carefully regulated dietetic and insulin regimen. Neither of these patients, though saturated with sugar, showed any special sensitivity to radiation, or any unusual response, and both subsequently died. On numerous occasions before this study, we were not able to note increased sensitivity on tumor tissue in diabetic patients receiving radiation treatments.

31. Warburg, O.: Ueber den Stoffwechsel der Cercinomzelle, Klin. Wchnschr. **4**: 534 (March 19) 1925.
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33. Rodini, P.: Dextrose and Cancer, Klin. Wchnschr. **5**: 465 (March 5) 1926.
34. Williams, J. R., and Swett, Madeleine: Hydrogen Ion Concentration Studies, J. A. M. A. **78**: 1024 (April 18) 1922.
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36. Pfahler, G. E.: The Saturation Method in Roentgen Therapy, as Applied to Deep Seated Malignant Disease, read before the International Congress on Radiology, London, July 1, 1925.

It would be presumptuous and foolhardy to attempt to classify end-results in these cases on a statistical basis with a similar group receiving only irradiation and no dextrose. The physical resistance of these patients is not measurable and therefore not comparable. The location of the disease and the duration and extent of involvement make even relative comparisons difficult, but we believe that our experience with radiation treatment of malignant disease over a period of twenty-eight years gives us a basis which will enable us to draw certain conclusions.

We have not observed a single instance of success or improvement in any of these patients receiving radiation combined with dextrose that has not been duplicated with equal uniformity and consistency when radiation alone was used. The recent great technical improvements, coupled with painstaking enthusiasm and persistence, have enabled us to accomplish definitely better end-results in the radiation treatment of malignant disease, particularly since the advent of the high voltage roentgen rays (200,000 volts) and the prolonged continuous use of highly filtered radium. We feel confident that the intravenous injections of dextrose combined with irradiation of cancer have not been harmful. We have long discontinued the extreme massive single dose radiation treatments. In some instances, even with very minute doses, nausea and vomiting, sometimes general malaise, and occasionally prostration have occurred. We have not found that dextrose will consistently prevent or even lessen the intensity of "radiation sickness." In many instances it does seem to ameliorate the symptoms, but like a great many other remedies which have been recommended, such as fruit juices, sodium bicarbonate, sodium citrate, sodium chloride and ginger ale, the effect is lost after a few trials. There were a few instances in which the relief was so noticeable and permanent that we believe that the intravenous injections of dextrose are justified in any case in which the comfort of the patient or the continued radiation treatment might be interfered with. We believe that its beneficial effects are probably ascribable to the same factors that are influential for good in infections, malnutritions and the other general conditions already described.

SUMMARY

1. It has been suggested that the intravenous injections of hypertonic dextrose solution in conjunction with radiation therapy renders cancer more susceptible to the effects of radiation.

2. Medical literature abounds with enthusiastic reports on the general value of dextrose in a great variety of infectious and nutritional diseases.

3. Our observations are based on the study of the effects of 1,044 intravenous injections in 111 cases, as compared with our general experience in radiation therapy of malignant disease over a period of twenty-eight years.

4. There is no evidence in this study to indicate that dextrose combined with radiation treatment of cancer improves the end-results, or in any manner renders cancer tissue more sensitive to radiation.

5. Dextrose does not definitely prevent the so-called constitutional reactions, or radiation sickness in all cases. Occasionally it does lessen the intensity, and sometimes seems to prevent it, at least temporarily, so that its use deserves a trial when there is any interference with the comfort of the patient or the proper radiation treatment.

6. A categorical survey would be pretentious. Our evaluation has been determined by careful clinical observations based on our general experience. In the light of our present knowledge, this is the only gage we have of determining the improvements or success in the treatment of malignant disease.

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ABSTRACT OF DISCUSSION

DR. HOWARD P. DOUB, Detroit: I believe that the greatest lesson we can draw from this paper is the value of caution in using or proclaiming new methods before they have been carefully checked up by either clinical use or careful research work. In the past a great many methods of this kind have been advocated, but, after using them, it has been found that many were incorrect. I am in agreement with the authors' conclusions. I have found no reason to believe that dextrose enhances the action of roentgen rays on cancer cells. I believe that, as Dr. Widmann has pointed out, the increased blood sugar in cases of extensive carcinoma and also the work of Dr. Warburg, would seem to contraindicate rather than indicate the use of dextrose in these cases. Another thing which Dr. Widmann has brought out and which is the only basis, I think, for comparison, is the individual susceptibility of cancer to the roentgen ray or to radiation of any type, and also the individual resistance of the patient to the tumor itself. We must take into account in any series of cases the age of the patient, the type of the tumor cell, the amount of fibrosis, and then the indefinite thing about which we know so little, the individual resistance of the patient to the tumor. In regard to roentgen-ray sickness and the effect of dextrose on it, we tried dextrose to a considerable extent several years ago when we were doing metabolic work in radiation cases and we thought that it did help roentgen-ray sickness in certain cases but that its effect was not at all uniform. One thing occurs to me which might possibly explain the action of dextrose on certain cases of roentgen-ray sickness. We found a definite alkalosis in patients who had heavy irradiation. It is a known fact that dextrose, when sterilized under certain conditions, has a tendency to become acid. It is therefore a remote possibility that the acid one injects may have some effect on the roentgen-ray sickness as well as a beneficial, nutritive effect on the patients.

DR. JAMES W. HUNTER, Norfolk, Va.: I have seen considerable radiation sickness follow the use of both the low voltage and the high voltage treatment. I have noticed that the best preventive is plenty of fresh air, and I have found that less radiation sickness results when a water-cooled tube is used than with an air-cooled tube; however, that is aside from the question. I should like to ask Dr. Widmann whether he has noticed any difference in results when dextrose was given through the mouth and when it was given through the skin. In my own experience when we believed that a radiation sickness was due to an acidosis, we gave doses of alkali, soda or vichy, without the slightest result. MacNider of the University of North Carolina has a theory that all life is dependent on the toleration or equalization between acids and alkalis. On that basis, if the radiation sickness is not an acidosis, but an alkalosis, the best agent to give is glucose. I used a commercial brand of corn syrup. In some cases, I thought it prevented the radiation sickness and in some not.

DR. TRUMAN ABBE, Washington, D. C.: Believing that radiation produces a definite breaking down of sodium chloride, I began questioning the patients as to the quantity of salt they were eating with their diet previous to treatment, and elicited what seemed to be a constant story that the patients who were eating salt heavily did not get the radiation sickness, while those who were living on alkaline diet did. I checked that also in persons who had been treated elsewhere and had come to me later. On that basis, I began feeding my patients with sodium chloride, previous to radiation, not telling them to take a definite dosage, but to use the salt-cellar freely at every meal they ate between the time I first saw them and the time they received radiation. In those who

take large quantities of salt, I have had very little radiation sickness. I have, however, taken care of another point: Within four or five days after the radiation treatment, I have the patients shift from the highly acid salt diet to a definitely alkaline diet, eliminating all salt and starting the alkaline diet with sodium bicarbonate. I believe that the alkaline diet is an essential feature in preventing the return of a malignant condition and in prolonging radiation effects. I do not have the salt treatment continued after the time of the radiation sickness.

DR. B. P. WIDMANN, Philadelphia: We have observed the effect of corn syrup, chocolate and sweets, and have noticed that sometimes there is a relief or an alleviation of radiation sickness. The beneficial results of these remedies are so often inconstant that a psychologic influence probably maintains for good. Successfully warding off seasickness by partaking freely of salty foods suggested to a patient the eating of chipped beef during roentgen-ray treatment, with apparently good results. We have tried nearly everything suggested in the literature, but the effects have always been transitory or very inconstant. Most of the cases we have reported were advanced cases of carcinoma. The response to radiation in many instances was marvelous. In no instance, however, did we feel that responses were obtained from dextrose in conjunction with radiation that were not comparable to those from radiation without dextrose.

MENTAL ASPECT OF LEPROSY*

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NEW ORLEANS

During the fall of 1923, I paid my first official visit, as visiting specialist, to the National Leprosarium at Carville, La. Some time previously I had visited this institution at the invitation of the medical officer in charge. During our conversation on the subject of the patients, he related his impression that mental abnormalities among them were not infrequent.

The statement confirmed similar observations already made, but not reported, by Dr. Ralph Hopkins, who long had visited the home professionally and who for many years has been a close student of leprosy.

My own impression after this initial visit was that the mental attitude of these patients differed somewhat from that of patients in large general hospitals. My visits were bimonthly and consisted largely of observations and examinations of such lepers as presented neurologic and psychiatric symptoms.

It is my purpose on this occasion to deal solely with the mental aspect of leprosy and to separate my theme, as completely as possible, from the better known and more widely published neurologic reports on this important subject.

In reviewing the extensive literature on leprosy, one is struck by the dearth of references to the manifestations of this disease in the central nervous system. This is notably true as to references pertaining to the mental aspect of these unfortunates. Could this not be explained by the fact that psychiatry itself is of comparatively recent years?

This does not imply that there has been a total absence of study and report on the mental condition of the leper, but that these have not been extensive. The following quotations from the literature will make this point clear.

In 1897, Meschede [1] reported a case of psychosis in a leper. While admitting a certain predisposition to mental troubles in the family, he nevertheless considers that leprosy exerts a direct influence on the development of dementia, the cerebral phenomena resulting possibly from some irritating lesion of the nervous system brought on by their toxins.

In 1898, Ashmead [2] called attention to the occurrence of melancholia in leprosy.

In 1899, Kovalevski [3] noted that the real scientific study of leprosy dated back only a few years, and was greatly facilitated by the segregation of the lepers. This afforded continuous observations, sometimes lasting during the lifetime of these unfortunates. After citing many instances from the literature, he concludes that lesions of the central nervous system have been observed in the leper; that leprosy should be admitted as an etiologic factor in mental disorders; that melancholia, mania and dementia have been observed in the leper; and he ends by the statement that, judging from the analogous action of other infectious diseases on the mental sphere, it would seem that leprosy would be more apt to cause amentia than other forms of mental diseases.

In 1898, Orbeli [4] reported cases of mental disorders in two lepers, man and wife.

In 1910, Jones and Pearson [5] reported a case of leprosy in a white person associated with insanity of the primary dementia type. They offer as possible contributary causes severe stress incident to school examinations and the mental shock caused by the knowledge of the existence of such a disfiguring disease in a girl of highly sensitive nature.

In 1910, de Beurmann, Roubinovitch and Gougerot,[6] in quoting Danielson and Boeck, state that the mind which remains sound and clear almost to the end may weaken during the last period of the disease. The same authors, quoting Hardy and Labarraque, further state that from the onset the morale of the leper is affected. The patient has morbid ideas, and involuntarily falls victim to his misfortunes. The authors themselves give a detailed description of a case of polyneuritis psychosis in a leper, and describe the mental condition as a profound modification of the cenesthetic state; a state of mental depression and anxiety, with ideas of persecution, and delusions and hallucinations of the senses, which state is an accentuation of the normal condition of the leper; i. e., mental depression and melancholia.

In 1910, Moreira,[7] after reviewing the literature and quoting many authors in support of the possibility that leprosy affects the nervous system and the brain, reported observations in nine cases presenting the following conditions: feverish delirium in a case complicated with erysipelas; delirium with degeneracy; dementia paranoides in lepra mutilans; dementia paralytica; complete dementia of apathetic form; dementia

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1. Meschede, in Report of International Congress, Moscow, Rev. neurol., 1897, p. 619.
2. Ashmead, A. S.: Melancholia of Leprosy, Alienist & Neurol. **8**: 431, 1898.
3. Kovalevski, Paul: Lepre et alienation, Rev. neurol. **7**: 158 (March 15) 1899.
4. Orbeli, D. I.: Lepra and Mental Disorders, Arch. psikhiat. **31**: 47-82, 1898.
5. Jones, R., and Pearson, W. J.: A Case of Leprosy in a White Person Associated with Insanity, Lancet **2**: 728 (Sept. 3) 1910.
6. De Beurmann, Roubinovitch and Gougerot: Troubles mentaux dans la lèpre, Lepra **88**: 179-181, 1910; **61**: 107-124.
7. Moreira, Juliano: Geistesstorung bei Leprakranken, Allg. Ztschr. f. Psychiat. **67**: 293-308, 1910.

senilis; manic-depressive psychosis, and Korsakoff's psychosis in a case of hallucination. He concludes with the statement that there is no single form of mental illness peculiar to the leper, and that complications such as tuberculosis, streptococcic infection or arteriosclerosis may be responsible for the appearance of mental disorders among lepers.

In 1926, Serejski, Frumkin and Kaplinsky [8] contributed an article on the psychology of leprosy and concluded that mental deterioration may occur as the result of leprosy.

TABLE 1.—*Classification of Abnormal Patients Observed in U. S. Marine Hospital No. 66, National Leprosarium*

Senile psychoses	5
Mental depression (all grades)	12
Mental depression (with blindness)	6
Melancholia	1
Toxic psychosis	1
Manic depressive	3
Praecox personality	5
Dementia praecox	3
Delusions, religious	4
Delusions of persecution	3
Paranoid personality	3
Hallucinations	3
Psychoses unclassified	4
Epilepsy	2
Drug addicts	4
Psychoneurosis	1
Psychopath, sexual	1
Suicidal attempts	2
Mental inferiority:	
High-grade moron	10
Low-grade moron	9

The records of the Louisiana Leper Home show a total admission of 331 cases of leprosy. Of these, ninety-nine patients were taken over as the primary nucleus, and formed part of the records, of the U. S. Marine Hospital Number 66, leaving therefore 232 cases distinctly recorded as in the Louisiana Leper Home group.

An attempt was made to ascertain the number of mentally abnormal patients in this group. There were no records regarding their mental state; so those constantly in touch with these patients, Dr. Hopkins and the Sisters of Charity, offered to look over this list and from memory to check off those they recalled that presented some mental abnormalities. These abnormalities comprised such conditions as feeblemindedness, imbecility, degeneracy, insanity, quarrelsomeness and apathetic and melancholic states. Sixty-seven abnormal and 176 normal lepers were found—an average of more than 28 per cent abnormal. This percentage is large, but it is based not on scientific study but mostly on lay diagnoses.

The records of the U. S. Marine Hospital Number 66 show a total of 427 admissions. Of these patients, 345 were normal and eighty-two were abnormal, or an average of 19.5 per cent abnormal.

The classification (table 1) of mental disorders, as observed in a group of eighty-two cases of leprosy under my observation, is not in harmony with the generally accepted classification of psychoses now in use by psychopathic hospitals, but it serves the purpose of this contribution so far as the psychic manifestations presented, which, though abnormal, could not be considered as psychic entities.

The group with senile psychoses, consisting of five patients ranging in ages from 53 to 72, presented, apart from the confused mental state with disorientation and memory defects, periods of agitation. The degree of mental deterioration varied in intensity; at times it was very pronounced and appeared more rapid in its evolution than is usually seen in ordinary types of mental disorders encountered in advanced years.

There were eighteen patients presenting mental depression, divided into two groups. One consisted of six lepers, all affected with blindness. It is difficult to estimate the rôle played by this affliction in causing the depression, but there is no doubt that the form of emotional disorder was more pronounced than that usually encountered among the blind from other causes. The other group, including twelve patients, exhibited this abnormality in all degrees, from the mildest form of depression to the most severe type consisting of an apathetic state and a state of indifference which are seldom seen in other diseases. Indeed, at times this condition amounted to a state of true melancholia. A point of observation which should be emphasized is that the severity of the depression was frequently in accord with the intensity of the leprous lesions. It is my opinion that leprosy itself is the cause of this depression. Whether it is further due to the toxemia which must play a rôle in the last stages of this disease, or whether it is an accompaniment of the disordered condition of the cenesthetic state, it is difficult to say.

The three patients in the manic-depressive group gave histories of previous similar episodes of the malady.

Three patients have been grouped under the heading of paranoid personality. They have probably given more trouble to the officers in attendance, because of their behavior, than all the other patients combined.

TABLE 2.—*Number of Admissions to Louisiana Leper Home and U. S. Marine Hospital No. 66*

	Admissions	Normal	Abnormal	Percentage Abnormal
Louisiana Leper Home	232	165	67	28.50
U. S. Marine Hospital No. 66	427	345	82	19.25
Total	659	510	149	22.75

Classification of Total Admissions According to Type of Leprosy

	Tubercular	Anesthetic	Mixed	Unclassified	Total
Louisiana Leper Home	76	78	70	8	232
U. S. Marine Hospital No. 66	222	134	..	71	427
Total	298	212	70	79	659

Classification of Abnormals, U. S. Marine Hospital No. 66

Age	No. of Cases	Sex	No. of Cases	Race	No. of Cases
From 1 to 10	0	Male	69	White	67
11 to 20	4	Female	13	Colored	7
21 to 30	10			Other races	8
31 to 40	15				
41 to 50	17				
51 to 60	28				
61 to 70	4				
71 to 80	3				
81 to 90	1				
	82		82		82

Their reactive mental disturbances have been much in the order of the manifestations present in cases of prison psychoses or situation psychoses, and were noticeable shortly after their admission, when they became very excited and developed a querulousness with pronounced delusions. They imagined that they were unjustly treated, and therefore reacted with all plausible statements and protests. They were constantly instigating some form of dissatisfaction among the patients.

Hallucinations, as psychotic symptoms, were met in three cases. These were particularly in the sensory

8. Serejski, Mark; Frumkin, J., and Kaplinsky, M.: Zur frage der Psychosen bei Lepra, Ztschr. f. d. ges. Neurol. & Psychiat. **101**: 615, 1926.

sphere, touch and pain. One labors under the imagination that something, or some one, disturbs his rest. He thinks that a ray of light or something else is thrown at him through the openings in his room or wherever he may be. He does not know the reason and takes no great offense at such acts. Another patient complains of feeling hot liquids, blood or water, pouring down her back and into her heart.

The group of mentally inferior patients numbered nineteen, varying in age from 17 to over 50, were divided into the high-grade morons and the low-grade morons, representing in various degrees inhibitions of development. They present an insufficiency of memory and a lack of proper association of ideas. The majority seem to be satisfied with their lot. Many are content with the events and conditions of the moment, and do not seem to anticipate any change for the betterment of their condition.

While a percentage of the lepers in this group observed by me have disclosed mental abnormalities, it is remarkable to note the contrasting cheerful and hopeful morale which is exhibited by those whom we considered mentally normal even in the face of a never ending tragedy.

Before entering into the presentation of typical cases at the leprosarium, I wish to call attention to certain conditions which do not usually accompany the admission of patients to general hospitals, but which are of importance in the study of the mental behavior of the leper in a leprosarium.

First, it may be stated that some lepers come to the leprosarium under compulsion, failing to recognize the importance of segregation, denying the necessity of abandoning family ties in order to prevent the possibility of the occurrence of similar tragedies in those dear to them. Secondly, many enter the institution protesting against the decree of society which demands their segregation; they will not admit the correctness of diagnosis in their individual case. Thirdly, some, while submitting to the inevitable, do not realize the seriousness of their malady until after their entrance to the institution. Then, only, it dawns on them that their separation may not be merely temporary but probably will endure for a lifetime. These manifest a certain amount of discouragement which they seldom overcome.

SUMMARY

When one considers that we are dealing here with a disease of such a chronic course and severe character as leprosy, it is not surprising that mental disturbances should be found among the lepers. It is well to remember, however, that an abnormal mental condition is not a morbid entity and does not mean an independently existing psychosis.

From the literature[9] one gathers the facts that mental disturbances and definite psychoses have been observed in the leper and that these have been attributed to leprosy, and to toxic and other factors indirectly due to the leprosy.

My observations in a study of more than 400 lepers show that 80 per cent were normal mentally; about 20 per cent presented mental abnormalities, and about 3 per cent were affected with definite psychoses, while a larger percentage presented abnormal mental conditions including mental inferiority and borderline states. About 4 per cent of patients admitted presented states of mental depression, with apathy and indifference to a marked degree. A small percentage were encountered who were dissatisfied and quarrelsome, at times presenting what may be termed delusions of persecution.

The abnormals were equally divided so far as the type of leprosy represented was concerned. It is to be noted here that the term "tubercular type" means that this form was in greater prominence in the individual patient than the anesthetic form. Few, indeed, were definitely of one type or other.

Race, as far as I have determined, has no special bearing on mental abnormalities in the leper.

CONCLUSIONS

Among the definite psychoses that have been observed, some have not differed from similar psychoses under different conditions of life; others, however, especially those accompanied by mental deterioration, such as dementia praecox and senile psychoses, show a more marked and rapid course so far as the mental deterioration is concerned. This rapid deterioration is attributed to leprosy.

The borderline cases, in which are included the abnormally depressed, apathetic and indifferent states, are products of the disease leprosy. To these may be added others presenting hallucinations of sensory type.

Those lepers presenting quarrelsomeness, with a tendency to persecutory delusions, are the products of environmental conditions and the knowledge of the attitude of the public regarding their affliction.

It is a combination of causes rather than a single factor that produces mental abnormalities. The same conditions apply in the study of the mental state of the leper.

REPORT OF CASES

CASE 1.—A white man, aged 48, had the anesthetic form of leprosy, of about sixteen years' duration. There was a history of his having objected to segregation and of having previously absconded from places of isolation. Shortly after readmission, he became greatly agitated and excited because he had been apprehended and returned to the Leprosarium against his wish. This he considered a personal offense. During the time of my first examination, four months after his readmission, he was at first courteous and affable, though evincing some surprise at my unexpected call, the purpose of which he would not understand, even though explained to him. He gave the examiner little chance to say anything. He was very loquacious, and kept himself much in the center of the stage. At times he was rather hostile and suspicious, and displayed much arrogance in his manner of expression. He was restless and agitated. His emotional reactions disclosed marked fluctuations. He manifested no reserve in expressing his indignation at what he termed the absolute unfairness of the officers in charge, meaning the physicians and health officers in general and the attendants, in allowing the present state of affairs to go on. He believed that they should be censured and proposed to enter a protest to the effect that these officials be made to suffer for not doing their duty toward enlightening the public and showing them the truth.

During subsequent examinations he displayed an extraordinary inclination to look for trouble everywhere, and to be disagreeable and irritable; he was inclined to command his associates and to defend his rights, all of which led him into quarrelsome arguments. A certain amount of self-conceit drove him to assume the rôle of defender of his fellow men. This querulousness, and the delusions of persecution in which he imagined himself and others at the leprosarium unjustly

9. In addition to the references already given, these are valuable:
Xavier de Maistre: Le lepreux de la cité d'Aoste.
Monrad-Krohn, G. H.: The Neurological Aspect of Leprosy, Videnskapsselskapets Skrifter, I. Mat. Natur. Klesse, 1923, No. 16, Christiania, Jacob Dybwab, 1923.
Rogers and Muir: Leprosy, New York, William Wood & Co., 1923.
Ashmead, A. S.: Soliloquy of the Leper, St. Louis & S. J. 85: 140 (Sept.) 1903.

treated, brought forth a reactive mental disturbance of a paranoid type not unlike the psychotic reactions of prisoners. After a prolonged and extensive study of this man's behavior covering a period of three years, I feel that the condition had best be diagnosed as one of a paranoid personality, much aggravated by severe nerve pains, for which the patient would not accept any treatment.

CASE 2.—A white man, aged 24, at the time of admission, eight years before, was considered a mentally normal youth and was very religious. Leprosy of the tubercular type affected severely both hands and both feet and also the face. Deep ulcerations of the nasal region and palate were responsible for flattening of the nose and a nasal twang in the voice. Shortly after his admission he became very indifferent, not only in his conduct but in his way of dress. He was silly and childish. He also became very filthy in his habits, spitting constantly on himself and his surroundings. He was markedly indifferent in his manner of eating, spreading his food about the floor and over himself.

Three years ago he was taken to the examination room in a rolling chair in which he sat in a listless manner with his head bent forward and downward on his chest. The right leg had been amputated at the upper third, and he had never used crutches because of the weakness and paralysis of the hands and fingers. He went about on all fours, and the knees presented large ulcerations as the result of the breaking down of tubercles aggravated by friction in the act of going about. He was quite emaciated and presented an awful appearance, sunken as it were in the chair, with shirt unbuttoned to the waist line and opened widely. He seemed to care little as to what was intended of him. Occasionally he would make meaningless grimaces to those about, but most of the time he was apathetic. To the simplest questions, such as What is your name? How old are you? there were no replies. He appeared not to know what these questions were about. Yet, as he was known to be fond of cigarets, he was asked if he wanted to smoke and he promptly answered "yes," and did smoke. His memory and judgment were very defective, and he had no insight as to his condition. He took no interest in anything, expressed no desires and made no complaint. Emotionally, he was apathetic. At times he grinned and laughed without cause or reason. I was told that he had outbreaks of anger during which he tore his clothes and used unprintable language. He did not attend to his person, and at one time it became necessary to isolate him. At times he became very irritable, particularly when his wishes were not gratified at once. There was a great diminution of affectivity, and a morbid indifference to the pitiable condition he was in. During the examination he was noncooperative, and this proved to be the case at all subsequent observations made. In fact, during the past three years he has shown a progressive mental deterioration. The diagnosis in this case is terminal dementia in a praecox.

CASE 3.—A white man, aged 28, had the tubercular type of leprosy, so diagnosed in 1918. The father and mother were living and well. One sister was dead. One brother was living and well. The patient had attended school to the eighth grade, and had had chickenpox but no other contagious disease. There was no history of nervous disease in the family. His orientation, memory and perception were good. At first he did not present any symptoms of hallucination but soon afterward showed abnormalities. He refused any form of treatment because he did not want any experiment to be done on him. He refused to have a blood test made because it would be of no benefit to him. He refused to have his lesions dressed until they reached the point of becoming gangrenous. Otherwise, he thought that he was well treated. He found the food very hard at times, and refused it. At the time of the examination he was not excited and did not look for trouble. He was suspicious of anything being done for him that would harm him, especially in regard to his eyes. He would not eat eggs because they caused pain in the eyes. He feared that any medicines he might take would also affect his eyes and cause blindness. He had had chaulmoogra oil for four years without results, and could see no reason why he should continue taking it.

At times he became very much excited. During such periods there were evident symptoms of cerebral and cutaneous congestions. The skin of the face was red and swollen. He suffered intensely with pain. He would have nothing to do with any one as he fancied that anything that might be tried would mean that much more suffering. He was seclusive in his habits, and had hallucinations of the sensory type and delusions of persecution. He was constantly in a depressive mood, and was morose and easily exhausted. At the examination he refused to answer any questions.

His leprous lesions affecting face, hands and feet became markedly inflamed at one time, with a corresponding exacerbation of his mental symptoms, with excitement and confusion. He was induced to accept a treatment with mercurochrome, which was then given, I believe, for the first time. At the end of the twenty-four hours after the injection his mental condition showed marked improvement. A second injection was also followed by similar favorable results, not only in his mental condition but also in his open lesions. This improvement was unfortunately of only short duration. His general condition again became bad, and at present he is constantly depressed and melancholic. The diagnosis in this case is toxic psychosis.

CASE 4.—A colored man, aged 54, with the tubercular form of leprosy, presented disorders of hallucination accompanied by insomnia. His complaint was that, in whatever place or position he might be, he was constantly being disturbed by sudden sensations of pain in various portions of the body, usually that side exposed to or in the direction of the opening in the room. Some one threw something after him through the window. He did not know what it was; he thought it was a ray of light, but he knew that it burned severely. In order to guard against these invisible agencies which so frequently disturbed his sleep, he had surrounded his bed with sheets which extended from floor to ceiling. Even then he had no rest.

He was of the ordinary type of his race, usually quiet, except when disturbed as aforesaid. Then he got out of bed and screamed, running from his room to keep these unknown agencies away.

CASE 5.—Hallucinations of the sense of heat were not infrequent among the lepers. One patient complained of feeling hot liquid, blood or water, pouring down her neck and into her heart. She knew it came from the outside, but could not explain how it was done or who was doing it.

CASE 6.—A white man, aged 59, had the anesthetic form of leprosy with an intense itching scaly skin. When examined shortly after admission he did not present any mental abnormalities. He was of a quiet disposition and could not understand why he had leprosy, but accepted the diagnosis because he knew that the medical officers could not be mistaken. He was a native of a central Louisiana parish and spoke only French, and his local dialect at that. As few in the colony spoke his language, he was forced to remain alone and seldom was seen to attempt to converse with any one. He soon presented marked mental depression. When asked why he felt so depressed and did not seek some distractions, he would answer that he was alone here while his family, wife and some nine children were "là-bas"; i. e., "over there." The grief attendant on his separation from his family seemed to be more than he could bear. This sadness in itself was so severe and intense as to create a melancholia which finally ended in stupor and death. The rapid and progressive depressions resulted from the constant thirst for affection and home surroundings.

CASE 7.—A white man, aged 43, showed symptoms of leprosy of the tubercular type in 1923; the condition was diagnosed as leprosy in 1925. He was well developed and nourished, was married, and had two children. At the time of admission he was apparently normal mentally. Though he regretted very much to be separated from his wife and children, he accepted his misfortune bravely, realizing the necessity of such a procedure for the safety of his own family and others. In the latter part of August, 1926, he began to speak in a rambling way and showed some change in his behavior. After a period of depression, which lasted a little

over a day, during which he even wept, he became quite excited and was constantly in action. It was noticed that his sleep became very much disturbed, and that he took his meals at very irregular hours, if at all.

He was examined two months after admission. He had a flushed face, brilliant eyes, and happy and animated expression. Rather gaudily dressed, he held in his hand a very elaborately decorated cane, which he brandished constantly, but used for effect only. Orientation and memory did not show any abnormalities. The attention was very mobile and frequently distracted. A look or gesture on the part of the examiner would cause him to change his trend of talk to inquire into the reason of it. He spoke constantly, one thought bringing on another. Flight of ideas was well marked. His judgment was much impaired. He admitted being nervous and irritable at times, but nevertheless showed a morbid euphoria. There were constant activity of movement and impulsive acts. All went well if he was not contradicted. The least contradiction would bring on great excitement. Examination of his room showed the greatest disorder possible. Besides an accumulation of household objects, pots and pans and other kitchen utensils, there were clothing, books and magazines all topsy-turvy. The walls were decorated by him in fantastic figures in red and black ink in lieu of paint. Lines of twine were indiscriminately stretched across his room. On these were hung all sorts of objects, including clothing. The whole place presented great confusion, in the midst of which he was contented and happy. This phase of excitement lasted seven weeks and gradually subsided. He is at present showing no evidence of his psychotic experience and is apparently normal. The diagnosis in this case is manic-depressive psychosis.

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ABSTRACT OF DISCUSSION

DR. G. H. MONRAD-KROHN, Oslo, Norway: In Norway the mental disturbances in leprosy are not prominent. We find mild depressive states, delusional states and paranoid states. I am disinclined to regard depression as a direct sequence of leprosy; in fact, I hesitate to consider it an abnormality at all. To be told that one is a leper is a severe mental shock in itself. Then, to be removed from home, forcibly, if need be, to a distant part of the country, curtails visiting, thus creating nostalgia. The rigid measures that the state must take to protect the rest of the community has a tendency to create a rather marked depression. Beurmann has observed that there is a marked difference between European and Asiatic patients as regards depression. While the ignorant and fatalistic Asiatics do not react with depression, the enlightened European patients do so react. That, I think, points as much as anything to the fact that this depression has nothing to do with the organic lesion of leprosy but is indirectly due to leprosy. As to the delusional and paranoid states, I think that they occur only in patients that are predisposed to such conditions. In about 160 cases of leprosy, only four patients were of unsound mind. The only psychiatric syndrome that one might think should be directly due to organic lesions of leprosy would be the Korsakoff syndrome, which has actually been described by de Beurmann, but only in one or two cases. The polyneuritis in leprosy is so essentially different from any other polyneuritis that it would seem extremely unlikely that one should get the lesion of the brain which is supposed to be the cause of Korsakoff's syndrome. While I have seen any number of cases of leprous polyneuritis, I have not encountered one case of the Korsakoff syndrome. So if I should judge from what I have seen in Norway in our cases, I should be inclined to say that direct leprosy psychoses do not exist with us. We know only the indirect mental reactions.

DR. L. L. CAZENAVETTE, New Orleans: If I heard and understood Dr. Monrad-Krohn correctly, he has not seen definite psychoses in the lepers under his observation in Norway. This is not in accord with the observations made at the National Leprosarium at Carville, La., where lepers are received from the continental United States. The observations here reported are known to the medical officers of the leprosarium and to Dr. Ralph Hopkins, visiting leprologist. My paper contains a summary of seven cases. As an example of how some patients are affected, I recall a man, aged about 60, with the anesthetic form of leprosy, who shortly after his admission became very depressed. This was greatly increased by the fact that he could not speak English. He had few people to converse with, and nostalgia was preeminent. His depression was followed by a melancholic state which was appalling. He died one year after his admission. It has been noticed that those in whom mental deterioration was a feature showed this condition in a more marked degree than is encountered commonly.

BISMUTH ARSPHENAMINE SULPHONATE

CLINICAL OBSERVATIONS ON A NEW ARSPHENAMINE SYNTHETIC IN THE TREATMENT OF SYPHILIS *

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The clinical testing of an arsphenamine in the treatment of syphilis can hardly reach finality at the hands of a single observer, nor can the validity of conclusions be established short of years of observation. This should be borne in mind as we briefly recite a two years' experience with a new arsphenamine synthetic, bismuth arsphenamine sulphonate, submitted to us in July, 1925, for clinical testing by its originator, Prof. George W. Raiziss. We take this occasion, too, to say that comparisons made by different observers are discussable intelligently only if the modes of administration of a new drug and the technic of its employment in the disease in different clinics bear some resemblance to one another—a detail too often forgotten in clinical as well as in scientific study, and notably illustrated by reported experience with sodium cacodylate and, more recently, sulpharsphenamine. Manufacturers' products will differ in spite of standard toxicity and trypanocidal tests, and clientele probably varies from place to place and from race to race in ways as yet far from clearly understood. We offer our results for the day, the generation, the method and the drug used, and do not seek to issue an encyclical pronunciamento in the full tones of final authority.

The trend of syphilotherapy is toward a much-to-be-desired simplification. The lineaments of the ideal antisyphilitic medicament, too, are slowly emerging from the haze that has overhung the battlefield of syphilology during the past two eventful decades. Soon, let it be hoped, will the day dawn when a single draft of an agreeable apéritif will not only convey immediate cure to the victim of syphilis, but bestow an infallible and enduring immunity on initiated and uninitiated alike. Until that time comes, effective intramuscular administration of a single easily prepared and stable drug, combining adequate spirillicidal with defense-arousing properties, must be regarded as a theoretical advance over the intravenous administration of spirillicides prepared with difficulty or unstable, and separate intra-

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muscular administration of resistance-building drugs, such as is now the rule in syphilotherapy. When a clinical test indicates that a new drug, in addition to the qualifications named, possesses marked tonic properties, a low toxicity, usefulness when other drugs are not tolerated, freedom from induction of therapeutic shock and paradoxical effects, and adequacy from the standpoint of serologic response, it merits careful consideration.

Bismuth arsphenamine sulphonate, *a priori,* as submitted to us seemed to offer a possible improvement on conventional syphilotherapeutic drugs. It combines bismuth and an arsphenamine, doing in a single motion, so to speak, what had formerly required two motions. While one cannot necessarily infer combined virtues from the separate qualities of the components of a synthetic, this combination looked promising, as a combined spirillicide and resistance builder of low toxicity, stable and simple of preparation. That a longer series of injections of smaller doses is required is not *ipso facto* a drawback, for adequate syphilotherapeutics is now accustomed to long courses and the short or absent rest interval, and the idea that syphilis is quickly cured or easily crushed rather than slowly worn down has gone to a richly deserved oblivion. The invariable intramuscular administration of the new drug is in the direction of progress, and so is the fact that it is a water-soluble compound of bismuth, quickly absorbed and free from cumulative effects. The control of mouth symptoms by the combination of arsphenamine with bismuth has already been noted by Scezary and Pomaret.

The new drug has a theoretical arsenic content of 17.2 per cent and a bismuth content of 31.7 per cent, but in actual practice, according to its originator, Dr. Raiziss, the arsenic content varies from 12 to 15 per cent and the bismuth, from 23 to 25 per cent. While its trypanocidal efficiency is low, its ultimate sterilizing effect in syphilitic rabbits is high, and its toxicity by the intramuscular route well within the limits for an adequate treatment effect. The drug appears to be stable and apparently of uniform therapeutic efficiency, so far as can be determined from experimental observation.

With these considerations in mind, we have employed the drug in the Syphilis Clinic of the University Hospital for twenty-one months, giving 4,118 injections to 204 patients. The drug has also been used in the private practice of one of us with satisfaction. Emphasis has been laid here on the effective treatment of early syphilis, for there is great need for an evaluation of drugs which will be helpful to the practitioner in the prevention of late syphilis by the more effective treatment of early syphilis. Serologic effects were studied through the cooperation of the laboratories of Dr. John A. Kolmer, Dr. Frank Lynch, and our own department, constituting a triple check and including a three-antigen Wassermann, the Kolmer and the Kahn technics. Up to April 1, 1927, no other drugs were used in patients receiving bismuth arsphenamine sulphonate, a severe test of the relapse-controlling and resistance-building powers of the drug, in early syphilis especially.

TECHNIC OF ADMINISTRATION

The drug is administered in 0.2 Gm. doses, intramuscularly. It is dissolved in ampules in 1 cc. of sterile distilled water, forming a yellow-brown solution, to which is then added 2 minims (0.12 cc.) of a 2 per cent solution of butyn as a local anesthetic. The technic of injection should be epifascial, for in our experience deep intramuscular injection, as is sometimes seen in the case of bismuth, may cause prolonged pain without corresponding infiltration. The inner angle of the upper outer quadrant of the buttock should be used rather than the lower and inner quadrants. The attempt to give 0.3 Gm. and 0.4 Gm. at a dose, divided between the two buttocks, was given up because of discomfort. The recommended initial dose is 0.1 Gm. for the physically sound adult. Children over 5 years tolerate adult dosage well.

EFFECT OF THE RECOMMENDED DOSE ON THE PATIENT

The local reaction is in general mild, and in only six cases out of 204 was it necessary to transfer the patient to some other form of treatment for this cause. Slight stinging pain may be felt at the moment of injection. Slight stiffness and tenderness in the majority, with slight swelling, heat and stiffness in perhaps 20 per cent of the patients may be noted, not in excess of that experienced in other forms of bismuth injection. The advice to take a hot sitz bath each evening is helpful. Infiltrations are not common but may be delayed, and there may be tenderness without infiltration or pain down the leg if the injection has been too deep or misplaced. Only one abscess has occurred in 4,200 injections, and that one in a very obese woman. No systemic reaction traceable to the drug as such has followed the initial injection.

FREQUENCY OF ADMINISTRATION

The initial recommendation of one weekly injection was soon modified by our experience into two injections a week for all patients in good general condition or in whom intensive effects were desired. The course which we have found most satisfactory includes twenty injections. Our earlier practice of allowing a month's interval between courses in early syphilis has been modified by gradual reduction of the rest interval from four weeks to two and, of late, none. Eight patients with early syphilis have been kept continuously under treatment for a course comprising as many as forty injections. It is important to emphasize that the slower action and smaller dosage of the drug must be compensated for by longer courses, and that prevailing arsphenamine conceptions cannot be transferred to the use of bismuth arsphenamine sulphonate in this particular.

GENERAL EFFECTS OF THE DRUG

Therapeutic Shock.—In only three patients in the series was shock observed in the form of a flare-up of the secondary eruption twenty-four hours after the first injection. No late Herxheimer effects were observed at any stage.

Spirillicidal Action.—This was studied in eleven patients with primary lesions. The average time of disappearance of the organisms was twenty-nine hours after the first injection of 0.2 Gm., the extremes being twenty-five and thirty-three hours, as compared with from eight to twenty-four hours for other arsphenamines.

Healing Effect.—In this particular, especially in early syphilis, the drug threatened to be a disappointment at the outset. From 15 to 25 per cent involution of the chancre occurs in the first forty-eight hours, with complete involution in from two to four weeks, but the

induration may persist for six weeks. The involution of indurated secondary lesions requires about the same time. The distinctly slower action of the drug as compared with the usual arsphenamines is apparent. The effect on moderately pronounced early constitutional symptoms (headache, periosteal pain, arthralgia) is prompt, relief being the rule in twenty-four hours. Late cutaneous syphilids involute with the same comparative slowness as the chancre, but the action is not less prompt than that of bismuth alone.

Toxic Effects and Reactions.—The new drug has a low toxicity from the clinical standpoint. In 4,200 injections, three nitritoid crises were observed. While this reaction has been observed by the French following the intramuscular injection of arsphenamines, it is unfamiliar in American practice. The reaction is typical and less acute, but more prolonged than after intravenous injection; it comes on from two to thirty minutes after injection, and may last as long as from six to twelve hours, during which the patient is in much distress, with suffusion of the face and neck, dizziness, wheezing respiration and late gastro-intestinal symptoms. The reaction was partially controllable in all our patients by the use of epinephrine and atropine after the reaction began. It can be entirely prevented by the use of atropine (one seventy-fifth grain, or 0.8 mg., subcutaneously) and the induction of anti-anaphylaxis by divided dose (Besredka), as has been described by one of us. One patient received fifteen injections without untoward effect after two successive nitritoid crises. Vomiting after an injection, seen in three cases, is a possible warning of threatened nitritoid reaction.

In 4,200 injections, no cases of primary exfoliative dermatitis occurred. One case which showed a dermatitis from arsphenamine cleared up while treatment was continued with bismuth arsphenamine sulphonate. Patients who have had acute toxic erythemas following other arsphenamines, but not true exfoliative dermatitis, may often be placed on bismuth arsphenamine sulphonate without reaction. Patients who have had true arsphenamine dermatitis may or may not be able to take the new drug. In two patients who had had arsphenamine dermatitis, in whom the substitution was made, there was an immediate flare-up of the dermatitis after the first dose of the new drug, and treatment had to be suspended. In general, then, the drug may be said to cause very little cutaneous irritation; certainly much less than its intramuscular alternate, sulpharsphenamine.

No reactions suggesting aleukemia hemorrhagica were observed.

In two dispensary patients, a bismuth line appeared in the gums, with slight fetor.

Gastro-intestinal disturbance, fever, headache, the graver prostrations, cerebral accidents, and all other types of reaction to arsphenamine, except those mentioned, were conspicuous by their absence.

Effect on Metabolic and Excretory Mechanism.—There were no cases either of jaundice or of significant renal irritation observed following the use of the drug. Five patients who had developed various degrees of jaundice while under treatment with arsphenamine were placed on bismuth arsphenamine sulphonate without unfavorable event. Weekly examinations of the urines of all patients were negative throughout. In five patients who had albuminuria, no increase in the symptom occurred.

Effect on Organs of Special Sense.—While no special examinations of the second or eighth nerves were made, there was no clinical evidence in the course of treatment of any organotropic or neurotropic effect.

Stimulant or Depressant Effects.—The new drug has marked tonic properties. Weight gains of from 2 to 20 pounds (0.9 to 9 Kg.) were the rule, and one patient not already markedly underweight had to have larger clothes. The increase in well being and in energy is that to be expected of any arsphenamine therapy, and this drug has the further advantage of the lack of toxic effects and reaction.

Effect on the Blood Wassermann Reaction.—Blood Wassermann tests were taken weekly. At the outset the effect seemed unduly slow, because of the weekly injection technic. From our series of forty-two early cases, the rate of Wassermann reversal appears to be proportional not to the time but to the number of injections. Patients given two injections a week became negative by the eighth week (from the fourteenth to the sixteenth injection), while those receiving one injection weekly became negative with the same number of injections but double the time. Relapses were more frequent in those treated by the less intensive schedule. The effect of the irregularity in treatment was apparent in both groups in delaying the development of a negative blood Wassermann reaction up to forty weeks. The expectancy for an effective combined arsphenamine (not neoarsphenamine) and mercurial therapy, as indicated by our experience, is approximately the securing of a negative blood Wassermann reaction by the eighth week (from the eighth to the eleventh arsphenamine injection), so that the new drug, bringing about a negative reaction in from fourteen to sixteen injections, unaided, lags only slightly behind the most vigorous present-day methods.

It is a striking fact, in contrast with reports of as high as 23 per cent resistant cases in the literature, that with three laboratories controlling the serologic results, not one of the forty-two patients with early syphilis thus far treated has proved Wassermann-fast. Not a single patient has given a positive Wassermann reaction at the end of his first course of twenty injections, though three have had subsequent relapses. In two pairs of patients, husbands and wives, the wives treated with arsphenamine and bismuth failed to give a negative reaction, while the theoretically more resistive husbands gave negative reactions with the sixth and twenty-fourth injections, respectively, of bismuth arsphenamine sulphonate. One husband had a relapse, but later gave a negative reaction, and one wife finally gave a negative reaction after sixteen injections of arsphenamine and ten of potassium bismuth tartrate.

Effect on the Fixed Positive Blood Wassermann Reaction.—Fifteen patients who had received thirty or more injections of an arsphenamine and a similar number of bismuth or mercurial injections without Wassermann reversal were placed on bismuth arsphenamine sulphonate. Three who have had from forty to sixty injections of the new drug have undergone reversal. Three others receiving twenty injections have likewise had a reversal. Of nine who have received thus far only from four to ten injections, six are unaffected and three show signs of ultimate complete reversal to a negative reaction.

Effect on the Positive Blood Wassermann Reaction in Asymptomatic Latency.—This small group has been

the most conspicuously resistant of the series. Three of six cases followed have been reversed by from twenty to thirty-one injections.

Serologic Relapse in Early Syphilis Under Bismuth Arsphenamine Sulphonate.—Of nineteen patients followed from the outset, four have had serologic relapses, but all are now negative. Two were regular in treatment and two irregular. The periods of observation since treatment was stopped include seven patients observed for nine months; four for ten months; one for fourteen months; four for seventeen months, and three for eighteen months. None of three patients with seronegative primary syphilis have had a relapse in from four to eighteen months, though one showed a transient partial positive Wassermann reaction after treatment was begun.

Effect on the Spinal Fluid (Early Neurosyphilis) in Early Syphilis.—In twenty-eight patients thus far examined, at periods ranging from two to four months after treatment with the new drug was begun, not one has shown an abnormal spinal fluid. One patient showed a "reversed Kolmer" (--44), which was not supported by the other three tests, and was probably a laboratory error. This is truly a remarkable record, if sustained.

Clinical Forms of Relapse in Early Syphilis.—Of nineteen patients with early syphilis now on observation without treatment from seven to eighteen months, not one has shown any clinical evidence of a relapse of the infection, either cutaneous, mucosal, osseous, visceral, optic or neurorecurrent. Since no other drug than bismuth arsphenamine sulphonate has been used, the adequacy of its effect on the defense mechanism is certainly suggested.

Effect on Allergy and Physiologic Defense.—This is not directly measurable, but may be inferred so far as present observation permits from the absence of relapse in early cases unprotected with mercury or bismuth, as such, and from the fact that no examples of delayed secondaries or fulminating precocious tertiarism have thus far been observed.

Evidence of Development of Drug Fastness.—Thus far, no evidence of the occurrence of drug fastness has appeared even in the most prolonged and uninterrupted courses. Forty successive injections without a rest period have been given with none but good effects. Four courses, totaling sixty-five injections, have been given to one patient, whose blood became seronegative in the course of this treatment but whose spinal fluid has remained abnormal.

Effect on Neurosyphilis (Late).—The number of patients (five) with neurosyphilis who were treated is too small to permit conclusions. The influence of the drug seems to be least in this group of cases. Only one showed a satisfactory response in the spinal fluid, with twenty injections. The gastric symptoms of neurosyphilis (except crises, of which we have no examples) respond satisfactorily. Lightning pains are relieved at the outset but recur to some extent during or after the course, though there is gradual lasting improvement. Persistent headaches seem to be promptly and lastingly relieved (three striking cases).

Effect on Late Cardiovascular Syphilis.—The clinical results in this group are excellent, but the serologic reversals have thus far been unsatisfactory. In only three of fourteen patients has there been a reversal after from twenty to forty injections. Symptomatically (which is much more important), the gains are exceptional. Eight patients under observation from three to eighteen months have been returned to eight-hour work shifts from total incapacity. Weight gains range from 1 to 10 pounds (0.5 to 4.5 Kg.); palpitation has decreased from 20 to 60 per cent; precordial pain, from 20 to 30 per cent; dyspnea, from 30 to 60 per cent, and fatigability, 80 per cent. No evidence of the induction of therapeutic shock or therapeutic paradox has thus far been observed.

Effect on Tardive Prenatal Syphilis.—Serologic reversals have been secured in four out of five seropositive cases. Our material is too small as yet to permit us to judge of symptomatic effects.

As to the effect of the drug in pregnancy and in the prenatal protection of the child, and its action in hepatic, splenic and gastric syphilis, we have as yet nothing to report.

MISCELLANEOUS CONSIDERATIONS

A complete clinical test should compare results in individual groups of patients with similar groups treated by other clinics and methods. Such a study is in progress but not yet reportable. Adventitious influences affecting results, including type of clientele, regularity of treatment and hygiene, may explain some disparities between the results of different observers. Evidence of deterioration, instability and fluctuating effect has not thus far been observed in bismuth arsphenamine sulphonate, but must be watched with all arsphenamines. We wish to emphasize the fact that new technics of treatment must be developed for the effective use of this drug, including short intervals between injections, longer courses and short or no rest intervals, if its advantages are to be utilized. We have already referred to such special treatment of reactions as is required. Observational follow-up and rechecking of patients is, of course, a matter for years of investigation. The use of the new drug in combination with other antisyphilitic medicaments, including fever therapy, will now deserve further study.

SUMMARY

The effectiveness and availability of bismuth arsphenamine sulphonate in early syphilis should give it high value. Its technic of administration is simple for any one acquainted with the principles of intramuscular injection. The precedents of arsphenamine technic must be discarded in its dosage, in the frequency of injection and in the duration of the course; two injections a week of 0.2 Gm. each, four courses of not less than twenty injections each, are recommended for the average adult, with a total series of from forty to sixty injections. Rest intervals should be short (two weeks), or absent between courses in early cases. Spirillicidal effect is slower than that of other arsphenamines, and healing effect still slower, but the latter is no criterion of cure. The ultimate effect of this drug unaided in early syphilis appears to be equal if not superior, so far as can now be determined, to that of modern intensive combined treatments with other drugs. The ultimate proportion of serologic reversal and the high proportion of negative spinal fluids (all cases in both instances) is certainly unusual and gratifying. The toxicity of the drug is very low, and reactions are comparatively benign and controllable. It is a useful alternate in cases in which other arsphenamines have

produced cutaneous and hepatic reaction. The grave forms of complications, dermatitis, hepatic injury, aleukemia hemorrhagica, and hemorrhagic encephalitis have not thus far appeared. Nitritoid crises, occurring occasionally, are controllable and preventable. Mouth symptoms as observed with bismuth alone are conspicuously few. The drug is well borne by children in adult dosage after 5 years of age. Most patients experience definite tonic effects. The patient at least is not robbed of his physiologic defense by its use. The absence of therapeutic shock and paradoxical effects in vital structures makes it a valuable drug in the treatment of cardiovascular syphilis, in which indeed its record with us is excellent. Its effect in Wassermann-fast syphilis is good, though the permanence of these results cannot be judged as yet. In entrenched neurosyphilis, so far as our small series goes, it is less effective than established methods of treatment. Taken all in all, we feel that bismuth arsphenamine sulphonate shows promise of being a distinct advance in syphilotherapy, exactly where such an advance is needed—in the prevention of late syphilis by the simplification and increased effectiveness of the treatment of early syphilis.

ABSTRACT OF DISCUSSION

DR. GEORGE W. RAIZISS, Philadelphia: In the past few years a considerable amount of work has been done in the chemotherapy of syphilis. Several new elements, exclusive of arsenic, have been added to the list of therapeutic agents. Investigations in France and elsewhere have been devoted to the study of bismuth, vanadium, tellurium and other elements. In our laboratories a great deal of time has been spent in the chemotherapeutic study of these elements, and also of their chemical combinations with arsphenamine and its derivatives. The first step in this type of investigation is the synthesis of new drugs; then follows the chemotherapeutic phase, and finally and most important is the clinical investigation of the drug, during which significant properties are often revealed. I feel particularly indebted to Dr. Stokes for his systematic study of bismuth arsphenamine sulphonate. This drug is a derivative of arsphenamine comprising a chemical union of bismuth with the arsphenamine molecule. I favor the view that the element bismuth is bound to the arseno group of arsphenamine. The product is extremely soluble and therefore, as Dr. Stokes has mentioned, can be administered in solution in a small amount of water. As to its chemotherapeutic properties, white rats can tolerate intramuscularly as much as 500 mg. per kilogram of body weight. Thus, the toxicity of this compound compares favorably with the well known arsphenamine derivatives. The product cannot be used intravenously on account of its greater toxicity. According to our present knowledge, bismuth compounds in general cannot be used intravenously with safety. Bismuth arsphenamine sulphonate was selected by us because of its high spirocheticidal efficiency. We noted that small doses of the drug cause a disappearance of spirochetes after twenty-four hours. This phenomenon immediately attracted our attention. We experimented with a large number of different chemical substances, and the rapid disappearance of spirochetes as well as the involution of lesions in experimental rabbit syphilis gave this product an outstanding position. While these properties are of vital importance, it is also essential that the spirochetes disappear from the deeper structures of the animal body. We found that 10 or 15 mg. of bismuth arsphenamine sulphonate is capable of effecting complete sterilization of the animal body infected with the spirochetal organisms. We demonstrated this by transferring the popliteal lymph node to control animals. In this respect, bismuth arsphenamine sulphonate is practically equivalent in therapeutic efficiency to arsphenamine. This may explain the excellent results obtained by Dr. Stokes in patients. The new antisyphilitic remedy has a promising foundation so far as its chemotherapy is concerned. It is now up to the clinical observers to ascertain its value in the treatment of syphilis.

DR. PAUL A. O'LEARY, Rochester, Minn.: I have had the clinical impression for some time, augmented by reports from Europe, that arsphenamine, given intramuscularly, has a higher therapeutic index than arsphenamine given intravenously. I believe the intramuscular route of administration has decided advantages both clinically and economically, if the toxic manifestations of the drug can be eliminated. Dr. Stokes has emphasized the necessity of carefully studying clinically a new preparation such as bismarsen before interpreting the clinical observations as significant. I believe this point is worthy of emphasis and I am sure you will agree on the wisdom at this time of merely stating our observations and of permitting the future to determine the value of this new preparation in the treatment of syphilis. I have had a shorter experience with the drug than Dr. Stokes has had, having used it since July, 1926, in two groups of patients: those with primary or secondary syphilis, and in the persistently positive blood Wassermann group. Of the acute syphilitic group, 87 per cent gave negative Wassermann reactions following the second course of bismarsen, and in the remaining 13 per cent, the Wassermann reaction was reversed to negative following the third course. We have used a less strenuous course than Dr. Stokes, the patients receiving eight injections to the course, 0.2 Gm. every fourth day, with a month's rest interval after each series of eight injections. One patient whose treatment was started while she was in the seronegative chancre stage developed mucous patches in the rest interval following the third course. We have since given mercury rubs during the rest interval, and have noted no other recurrences of any type. I believe that even more important than the serologic reversals is the fact that none of the patients with acute syphilis have shown any abnormality in the spinal fluids. We have found active *Spirochaeta pallida* in the chancre serum ninety-two hours after the intramuscular administration of the drug, and I have considered this slow disappearance of the organisms from the active lesions as a point in favor rather than against the drug. Complications of all types have been few. There has been one moderately severe exfoliative dermatitis which developed following the eighth injection of bismarsen. The local reactions from the injections are likewise very mild, resembling bismuth in this respect, and since adding a few drops of 2 per cent butyn to the bismarsen solution, we have not had any discomfort from the intramuscular injection. I have not noted any of the delayed reactions to which Dr. Stokes has called attention. Two of the ten Wassermann-fast patients have completed a four course system and now show serologic reversal. It is my hope that a continued study of a larger series of cases over a longer period will bear out the impression that this drug has a low degree of toxicity. If further observation confirms the results recorded here today in the treatment of acute syphilis, I believe that Dr. Raiziss will then be accredited with another of the outstanding advances in modern syphilotherapy.

DR. HAROLD N. COLE, Cleveland: I have not used this drug to such an extent as either Dr. Stokes or Dr. O'Leary, but I agree with them that it would be well if we could get a drug that would be successful by the intramuscular route. There is too much intravenous therapy at present. We have never believed in the administration of the iodides intravenously, and if we can get away from this route, I think we shall all be better off. I have not had the same results with this drug that Dr. Stokes and Dr. O'Leary have had. Most of the patients complain bitterly of the pain, particularly ambulatory women. I have not used it with many of these patients, but in the last three months have had some women on whom I have used the treatment in my office; they returned within a few days with a marked swelling of the buttocks, and were unwilling to take any more of the treatment. I have used it on some men with the same results, and in one instance have had a quite marked hemorrhagic reaction. Otherwise, there have not been any untoward effects from its use, nor has any exfoliative irritation resulted. As to the

comparison between this preparation and arsphenamine, I do not agree with Dr. Raiziss that milligram for milligram it is just as good as the arsphenamines. Certainly, so far as its spirocheticidal qualities are concerned, it is not. In some cases, the spirochetes have disappeared in from two to five days and in others not as early, and I think it does not compare with the arsphenamines as to specific activity. I have not tried it out on Wassermann-fast cases, and so cannot speak of it from that standpoint. I agree with the other speakers that it will have to be studied much further before we can say that we have another drug which is of advantage in the treatment of syphilis.

DR. JOSEPH MÜLLER, Holden, Mass.: While I think that these bismuth preparations seem to be superior to any other, at the same time, I feel exactly as Dr. Stokes does, that this drug, unless further examination proves it so, is still in the experimental stage, and for the average practitioner, and in the bulk of the cases, the old preparations and methods of treatment are to be preferred. Certainly, the drug is slower in action than arsphenamine. We know how arsenic and mercury work in preventing late neurosyphilis but, perhaps, it will be the responsibility of the next generation to evaluate bismuth from this point of view. There are certain data which seem to confirm the view that patients treated with mercury alone, or with mercury plus arsphenamine, do not show as early nervous symptoms as do those treated with arsphenamine alone. I think that there are no observations as yet on those patients treated with bismuth alone. I should like to ask Dr. Stokes whether he has had any patients under treatment with a chancre and with positive spirochetes who gave a negative Wassermann reaction which never became positive. We have been quite successful in treating these patients by arsphenamine or arsphenamine and mercury, and in some cases, the blood serum for three years never showed a positive Wassermann reaction. We were never able to get these results in cases treated with bismuth alone, but we did get it in one case, treated with bismuth and arsphenamine.

DR. JOHN H. STOKES, Philadelphia: Pain in intramuscular injection, when it occurs in a large proportion of cases, has, in our observation, been due more to technical differences in the method of giving the injection than to the drug. This is the point at which the practitioner finds it difficult to adopt the intramuscular route. There may, of course, be differences in the preparations used and in individual lots of the same preparation, which explain some of the trouble. The fact remains, so far as we are concerned, that only six of 200 patients had to give up the use of bismuth arsphenamine sulphonate because of local reaction, and that this group included all types of patients, most of them compelled to be up and about earning their living. Dr. Cole's observations on the spirillicidal effect of the drug are extremely interesting, especially in combination with his difficulties with the local reaction. I am all but convinced from clinical observation that there are such things as "dud" lots of all the arsphenamines, which pass toxicity tests but are therapeutically ineffective or reaction-producing in human beings with syphilis. Such lots are well known to exist on a large scale in neoarsphenamine, and I am quite sure I have detected them in arsphenamine. I have seen lots of both bismuth salts and mercurial salts so reaction-producing that they were unusable. I should be inclined to suspect that Dr. Cole was the victim of such a "dud" lot of bismuth arsphenamine sulphonate, which blew up his patients without blowing up the spirochete. I welcome simplification in all aspects of the treatment of syphilis, and intramuscular medication, which is reliable, is simplification. But I must insist that technics must be identical for a comparison of results, and that no element in the situation—drug, method, patient, operator—is sacrosanct. Too often, one or another is lost sight of in the controls. I welcome bismuth arsphenamine sulphonate for study for the obverse of the reason why the malarialists recognize me as an opponent—because it looks as if the new drug might make the treatment of some of the aspects of syphilis easier for patient and physician, instead of more difficult, without loss of ultimate effectiveness. In the increased effectiveness and simplicity of the treatment of early syphilis lies the cure of late syphilis.

THE OXIDATIVE DESTRUCTION OF VITAMINS A AND E

AND THE PROTECTIVE ACTION OF CERTAIN VEGETABLE OILS *

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It is generally accepted that vitamin A as found in butter fat and cod liver oil is easily destroyed. Heating and aerating these fats for a short time or exposing them to air at room temperature for a longer period uusually deprives them of every trace of vitamin A. During such treatment the fats absorb oxygen and a long series of partial oxidation products is recognized as accompanying the more or less undefined condition of rancidity so developed.

A destruction of vitamin E as found in butter fat was first indicated by our experiments [1] on milk rations. These showed that 50 per cent of whole milk powder supplemented with 8 per cent of casein, 2 per cent of mineral salts, 5 per cent of yeast and 35 per cent of starch was adequate for growth and reproduction of rats, but that when appreciable quantities of lard, from 15 to 25 per cent, replaced equal weights of starch in such rations (but without casein) the animals exhibited the typical symptoms of vitamin E starvation; the females suffered resorption of the embryos, the males degeneration of the gonads. Further unpublished experiments in which the food intake was determined showed that the smaller consumption of the high calory diet could not account for the absolute difference in behavior of the animals. It was not a case of critical level of intake of vitamin E but of apparent destruction or inactivation of this accessory by the lard, a phenomenon for which we had no explanation. Even before our own observations, Anderegg and Nelson [2] had reported similar data on the unlike behavior of rats on milk rations with and without lard, which they said indicated, in the lard diet, an unsatisfactory quantitative relationship between the ration constituents, notably of fat to protein. More recently in our laboratory Miss Clayton,[3] studying the relative food values of various meats and milk and eggs for reproduction and lactation, found that reproduction in rats was successively improved by the removal, first of lard, and later of cod liver oil from the ration mixture. These tests indicated that the vitamin E content of the protein foods used was made less effective by the presence of either of these two unsaturated fats. Still more recently, Evans and Burr [4] have presented supporting evidence that lard as 22 per cent of the ration destroys the vitamin E of wheat germ but does not do so at a lower level (7.7 per cent). Among the other fats which they studied, Crisco destroyed vitamin E, butter fat did not, nor did cod liver oil on a low (2 per cent) level. Of the fatty acids studied, oleic destroyed vitamin E, stearic did not.

* From the Department of Vital Economics, University of Rochester.

1. Mattill, H. A.; Carman, J. S., and Clayton, M. M.: The Nutritive Properties of Milk, J. Biol. Chem. **61**: 729 (Oct.) 1924, and earlier papers.

2. Anderegg, L. T.: Diet in Relation to Reproduction and Rearing of Young, J. Biol. Chem. **59**: 587 (April) 1924. Anderegg, L. T., and Nelson, V. E.: Whole and Skim Milk Powders as Food, J. Indust. & Engin. Chem. **17**: 451 (May) 1925.

3. Clayton, Mary M.: The Influence of Diets Containing Unsaturated Animal Fats on Reproduction and Lactation in the Rat, Proceedings of the American Society of Biological Chemists, J. Biol. Chem., to be published.

4. Evans, H. M., and Burr, G. O.: Vitamin E: The Ineffectiveness of Curative Dosage When Mixed with Diets Containing High Proportions of Certain Fats, J. A. M. A. **88**: 1462 (May 7) 1927.

If the destruction of vitamin E like that of A takes place to the accompaniment of oxidative changes in the fats, it should be possible to correlate the results of animal experimentation with observations on the susceptibility of fats to oxidation. For making such observations a simplification of the method of Greenbank and Holm [5] seemed most feasible, and as thus far used, it has given us figures possessing relative rather than absolute value. However, the results suggest implications of such importance that the method should be more widely used. We have examined only a few composite rations and simple fat mixtures by placing weighed amounts in Erlenmeyer flasks, displacing the air by oxygen and connecting them, in an air bath at 70 C., with open mercury manometers outside. Automatic recording of the pressure changes has been dispensed with and stirring of the mixtures has not been attempted. Only a few of the representative but consistent results need be given here.

Among the first of the composite rations studied were the Evans and Bishop sterility ration (McCollum's [6] 4347) and McCollum's [6] 4353, the former containing 15 per cent of lard and 9 per cent of butter fat, the latter the same except that 2 per cent of wheat germ oil replaced 2 per cent of lard, thus making it adequate for reproduction. One hundred grams of the rations in liter Erlenmeyer flasks at 70 C. gave the figures presented in table 1.

TABLE 1.—*Readings in Two Composite Rations*

Manometer Readings, Mm. of Mercury *	Ration 4347	Ration 4353
24 hours	± 0	± 0
43 hours	—44	— 2
67 hours	— 8	— 2
120 hours	± 0	—14

* These figures are not corrected for the existing barometric pressure, which, of course, was uniform for all the flasks of a single group.

Obviously, the sterility producing ration was much more susceptible to oxidation than the one containing wheat germ oil; at the end of the run the odor of the former was rancid and choking; the latter had an aromatic odor of entire wheat bread and was distinctly not rancid. This is a confirmation of the observations of Anderegg and Nelson.[7] Indeed, these authors were the first to point out that wheat germ oil delays the appearance of acrid smelling oxidation products in milk rations and other mixtures containing cod liver oil, a property that was possessed to a greater extent by water and to a lesser extent by 95 per cent alcohol. They were further able to correlate these observations with the reproductive behavior of rats.

A study of simple fat mixtures gave promise of more specific information on the nature of these oxidation processes and the manner of their inhibition or acceleration, and in view of McCollum's [6] recent suggestion of a relation of vitamin E to iron metabolism, particular interest attached to his use of ferrous sulphate $+ 7\ H_2O$ in artificial salt mixtures. To 10 Gm. of cod liver oil in each of four 300 cc. Erlenmeyer flasks was added 10 cc. of water. Flask 1 had no further addition; to flask 2 was added 6 drops (0.2 Gm.) of wheat germ oil (which had been dissolved in the fat); to flask 3 was added 0.5 Gm. of ferrous sulphate $+ 7\ H_2O$ (which had been dissolved in the water) and flask 4 had the same iron addition plus 6 drops of wheat germ oil. The figures in table 2 show the progress of oxidation as measured by oxygen absorption at 70 C.

Apparently the oxidation of cod liver oil gets under way with very little delay (flask 1); the so-called induction period is prolonged from 3 to 4 hours by the presence of a trace of wheat germ oil (flask 2); the presence of ferrous ion (flask 3) has the opposite effect, which the simultaneous presence of a trace of wheat germ oil (flask 4) again antagonizes for a similar period.

TABLE 2.—*Readings in Fat Mixtures*

Manometer Readings in Mm. Hg After	Flask 1	Flask 2	Flask 3	Flask 4
80 minutes	— 18	— 6	— 16	— 4
2 hours	— 20	+ 2	— 34	+ 6
4 hours	— 34	± 0	— 66	— 16
4½ hours	— 42	— 6	— 78	— 22
5¾ hours	— 66	— 14	—106	— 52
7 hours	— 94	— 28	—132	— 84
21½ hours	—246	—150	—294	—142

Butter fat, for various reasons, is less rapidly autoxidized; a similar test with 10 Gm. of butter fat and the same additions as in the previous test gave the results presented in table 3.

These figures and several other series which need not be cited show that the susceptibility of butter to oxidation is decreased by the presence of a trace of wheat germ oil and is increased by the presence of ferrous ion. Some ferric ion is formed during the process, but the oxygen required for the purpose is a very small amount, as shown in a test with tristearin. After seventy hours at 70 C. a stearin water mixture showed an oxygen absorption represented by — 14 mm. of mercury, a stearin-ferrous sulphate solution mixture represented by — 30 mm. of mercury, figures which are also quite in accord with the observations of Evans and Burr,[4] to the effect that tristearin had no destructive effect on vitamin E.

TABLE 3.—*Readings with Butter Fat*

	Manometer Readings in Mm. After 24 Hours
Flask 1	—52
Flask 2 (wheat germ oil)	+10
Flask 3 (ferrous iron)	—98
Flask 4 (wheat germ oil and ferrous iron)	—18

In this connection the Evans and Bishop sterility producing ration (McCollum's 4347), but with hydrogenated lard in place of ordinary lard, undergoes little oxidation, and the animals on it are not sterile, as shown in unpublished experiments by Miss Cummings.

These tests with butter fat are of particular interest in connection with the experiments of McCollum and his co-workers [6] just mentioned. Diets 4366 and 4374, containing 5 per cent of butter fat as the only source of vitamins A and E, and adequate for growth and reproduction, became inadequate for both these purposes, even causing the development of xerophthalmia, when 0.5 per cent of ferrous sulphate was included (diet 4372). The xerophthalmia could be cured and normal growth rate could be restored by either of two means, the addition of wheat germ oil to the diet or the replacement of ferrous sulphate by a ferric salt (citrate). From these and other experiments they concluded that vitamin E was in some manner associated

5. Greenbank, G. R., and Holm, G. E.: Measurement of Susceptibility of Fats to Oxidation, Indust. Engin. Chem. **17**: 625 (June) 1925.
6. Simmonds, Nina; Becker, J. Ernestine, and McCollum, E. V.: The Relation of Vitamin E to Iron Assimilation, J. A. M. A. **88**: 1047 (April 2) 1927.
7. Anderegg, L. T., and Nelson, V. E.: Milk Powders as Food: II. Indust. & Engin. Chem. **18**: 620 (June) 1926.

with iron metabolism, and specifically that ferrous sulphate was a therapeutic agent of questionable value.

The catalytic activity of ferrous ion in oxidation generally and particularly in the autoxidation of unsaturated fats provides a direct explanation for the malnutrition of rats on diet 4372, and for the protection afforded by wheat germ oil. Both vitamins E and A are destroyed by the oxidative decomposition of the butter fat under the "stimulus" of ferrous iron. When this is replaced by ferric iron, the same ration becomes adequate in both these accessories. When the process of oxidation, accelerated by the presence of ferrous iron, is simultaneously retarded by the addition of wheat germ oil, the same original ration becomes adequate again, probably irrespective of the vitamin E content of wheat germ oil—irrespective, because this oil does not provide vitamin A and yet appears to do so.

Vitamin E is probably destroyed earlier than vitamin A in the course of these oxidations. This opinion is based on the fact that the typical sterility-producing ration, such as McCollum's 4347, does not give striking evidence of an A-deficiency, although showing a deficiency of E. However, the immediate access of growth in our animals [8] on such rations when wheat germ oil was introduced into the diet (irrespective of improved reproduction) is suggestive of an increased available vitamin A supply. Evans' [9] observations of a similar character probably have the same basis.

These considerations also lend further weight to our belief [8] that butter fat contains a larger amount of vitamin E than Evans and others have been able to demonstrate. Otherwise how is it possible to explain the successful reproduction seen in rats on a properly prepared skim milk powder ration? Anderegg and Nelson's experiences have been duplicated by Miss Clayton; skim milk powder as 53 per cent of a ration containing no other source of vitamin E, and with cod liver oil added daily but no water, has permitted reproduction and fair lactation to the third generation. Reinforcement of this ration by even a small amount of butter fat or especially cod liver oil produces sterility.

Obviously there must be many factors aside from ferrous iron, the nature of the unsaturated fats, and absence of water, which catalyze the destruction of vitamins A and E in the presence of the unsaturated fats themselves. Among the chemical products recognized as accompanying the oxidation of fats are many of the higher and lower fatty acids and their aldehydes, one of which, epihydrin aldehyde, or its precursor, is held responsible for the commonly employed Kreis test as an index of rancidity.[10] Fatty acid peroxides are also formed and can be demonstrated easily. Preliminary tests on butter fat oxidation products (table 3) indicated that unless the oxidation had proceeded too far, the Kreis test was negative in the products containing traces of wheat germ oil, but strongly positive in those without it. Also the latter products had lost their yellow pigment, the former had not. Furthermore, the arsenic chloride test for vitamin A showed still a trace left in the samples protected by wheat germ oil but none in the others. When the oxidation is more vigorous, as with cod liver oil (table 2), the temporary protection afforded by wheat germ oil is soon broken down and all samples respond alike. The peroxide test has not given consistent information in this connection but deserves further study because fresh butter fat, tristearin and wheat germ oil did not respond to it, while a very slight positive test was obtainable from samples of lard, Crisco, cottonseed oil, cod liver oil and slightly rancid butter.

The course of the oxygen absorption of autoxidizable fats had been followed by Holm and his co-workers.[11] Their conclusion that certain unisolable and unknown compounds called moloxides probably precede the appearance of peroxides is only one of the complexities which their study revealed. We have also seen many instances of an initial oxygen absorption followed by one or more positive phases, suggestive of periodicity in the process.

A possible explanation for the protective action of wheat germ oil was found in the experiments of Holm [11] to the effect that the hydroxyl group has a very powerful retarding action. The acetyl value of a fat is a measure of its content of hydroxy groups. We were unable to find the acetyl value of wheat germ oil in the literature; as a result of triplicate determinations on a single sample it appears to be 14.4. The reported acetyl value of other fats and oils of interest in this connection is as given in table 4.[12]

TABLE 4.—*Acetyl Value of Fats and Oils*

Butter	1.9-8.6
Castor oil	150
Coconut oil	0.9-12.3
Cod liver oil	4.8
Corn oil	11.0-11.5
Cottonseed oil	8.0-18.0
Lard	2.6
Olive oil	10.6
Peanut oil	9.06
Wheat germ oil	14.4

It is apparent that the vegetable oils important in connection with vitamin E and on some of which comparable animal experiments have been made by Sure [13] and by Evans and Burr [14] have relatively higher acetyl values than the animal fats and oils, particularly lard and cod liver oil. Butter is intermediate and variable but may approach the vegetable oils. The vitamin E content of these oils as determined in animal experiments does not parallel their acetyl value, but it was desirable to know whether these oils with appreciable acetyl values depressed and delayed the oxidation of the unsaturated acids in butter fat. Experiments on a limited number indicate that some of them do, but with great variability, which is due perhaps to differences in manufacturing and subsequent storage conditions. None of these oils have afforded the almost unfailing protection provided by natural wheat germ oil.

If the hydroxy groups of these vegetable oils are responsible for the delayed oxidation, the removal of these groups by acetylation should deprive them of their efficacy. The tests thus far made with acetylated wheat germ and cottonseed oils show that while not without effect they have lost very much of their power as antioxidizers. Under the conditions of the experiment it is uncertain how long they may remain acetylated, since by hydrolysis they revert to the hydroxy form. The

8. Mattill, H. A., and Clayton, M. M.: Vitamin E and Reproduction on Synthetic and Milk Diets, J. Biol. Chem. **68**: 665 (June) 1926.
9. Evans, H. M.: Invariable Occurrence of Male Sterility with Dietaries Lacking Fat Soluble Vitamin E, Proc. Nat. Acad. Sc. **11**: 373 (July) 1925.
10. Powick, W. C.: Compounds Developed in Rancid Fats with Observation on the Mechanism of Their Formation, J. Agr. Research **26**: 323 (Nov. 24) 1923.
11. Holm, G. E.; Greenbank, G. R., and Deysher, E. F.: Susceptibility of Fats to Autoxidation, Indust. & Engin. Chem. **19**: 156 (Jan.) 1927.
12. Woodman, A. G.: Food Analysis, McGraw Hill, 1915, p. 175.
13. Sure, Barnett: Dietary Requirements for Reproduction, J. Biol. Chem. **69**: 29 (July) 1926.
14. Evans, H. M., and Burr, G. O.: The Antisterility Vitamin Fat Soluble E, Proc. Nat. Acad. Sc. **11**: 334 (June) 1925.

distribution of the anti-oxidizing groups between the glycerides and the unsaponifiable portion of the oils remains to be determined.

In all these tests there was a satisfying agreement between the figures for oxygen absorption, bleaching of the butter fat and the brilliance of the Kreis test for rancidity. When the butter fat was completely protected by 2 per cent of a vegetable oil, as indicated by little or no oxygen absorption, its yellow color persisted and the Kreis test was negative. Oxygen absorption was accompanied by roughly proportionate color change and rancidity.

The organic chemistry of these oxidation processes, their acceleration and delay, is still unknown; but certain nutritional implications are obvious. In our recent paper [8] on vitamin E and reproduction on milk diets is the sentence "It is not very helpful to suppose that vitamin E as it occurs in milk fat is more vulnerable to oxidative or other destruction than it is in other fats." Apparently, however, this point of view is extremely helpful. Depending on the presence of catalysts of various kinds, or of antioxidizers, the amount of vitamin E present in an individual foodstuff or in ration mixtures remains unimpaired for shorter or longer periods. Whether the oxidative changes that condition its destruction may take place in the alimentary tract after the ration has been consumed, as well as during its preparation or in containers before its ingestion, remains to be determined. Obviously the assay of foodstuffs for their content of vitamin E has been a resultant of (1) the actual amount of E present and (2) the kind and amount of antioxidizers associated with it. This aspect is even more essential in the study of vitamin A and its permanence during storage and manufacturing or domestic manipulation. It is unnecessary to assume that vitamin A exists in nature in more than one chemical form if the substances that happen to be associated with it, in almost negligible quantity, can so actively influence its survival under conditions favoring oxidation.

SUMMARY

The oxidative changes that accompany the beginning and development of rancidity in unsaturated animal fats tend to destroy vitamins A and E. The progress of rancidity is hastened by several well recognized conditions and especially by the catalytic action of ferrous iron. It is delayed by other well recognized conditions, notably by the presence of hydroxy groups. Since vegetable oils, especially wheat germ oil, although having as high or higher iodine numbers, contain more hydroxy compounds than lard, cod liver oil, butter and other animal fats, they delay autoxidation in fats and thereby prevent accompanying destruction of vitamins A and E. That vitamin E regulates iron metabolism in any manner is improbable. The relative paucity of butter fat in vitamin E is an artefact; for, when properly protected from oxidative changes, very small amounts of butter fat suffice for normal reproduction. The existence of vitamin A in different forms in nature is an unnecessary assumption; small amounts of protective substances which fortuitously accompany it determine whether it survives a destructive process. In a biologic assay of foods and food mixtures for their content of vitamins A and E, the presence of oxidizing catalysts and antioxidizers cannot be left out of account, and a recognition of their rôle may serve to clarify many misconceptions and obscure contradictions found in the literature of nutrition.

DRUNKENNESS

A QUANTITATIVE STUDY OF ACUTE ALCOHOLIC INTOXICATION *

EMIL BOGEN, M.D.
CINCINNATI

Drunkenness is by no means a new phenomenon. The inebriety of Noah was only one of a large number of similar instances in the Bible and other ancient sources, and it has been a common feature of the life and literature of the Western World ever since. The popular attitudes toward this condition have ranged from the rigid prohibition enjoined on his "faithful" Moslems by Mohammed to the ecstatic apotheosis of alcoholic intoxication by the inspired sot, Omar Khayyam. In more recent times opinion has been divided more on the question of just what degree of alcoholism is to be condemned, rather than on the question of drunkenness or sobriety, since there are few who are willing today openly to take up the cudgels for the former condition.

The tremendous increase of automotive traffic, with its greater speed and consequently greatly increased potentialities for serious accidents, and the difficulties arising out of the attempts to enforce the eighteenth amendment to the constitution, have thrown on the physician many more problems and greatly increased responsibilities in connection with the diagnosis of acute alcoholic intoxication, and the determination of the relationship between the degree of intoxication and the actions of the individual.

The courts have repeatedly held that the recognition of drunkenness is a matter of simple observation on which any one may testify without any claim to expert ability or special training. The odor of alcohol, and the dilated pupils, flushed face, staggering gait, confused thick speech and boisterous behavior are commonly recognized features of this condition which are readily discernible. A person may, however, be under the influence of alcohol to an extent that seriously affects his powers and behavior, especially in such a responsible position as driving an automobile, without presenting the entire common picture of drunkenness. Thus, the Pennsylvania courts, in the case of *Elkin* v. *Buschner,* 16 Atl. 102-104, held that although a man may walk straight, attend to business and give no outward or visible signs of intoxication, yet if he is so affected by alcohol as to be excited, or not to possess that clearness of intellect which he would otherwise possess, he is suffering from acute alcoholism. On the other hand, the Ohio court, in the case of *Gard* v. *State,* 33 Ohio Circuit Courts page 632, has held that a man cannot be considered intoxicated within the meaning of the law of the state, even though the odor of alcohol on the breath, a flushed face, and a disposition to talk loudly and freely are shown, unless it is further shown that he had "lost either the control of the faculties . . . or of the muscles of locomotion."

The multitude of other pathologic conditions which may either mask or mimic the symptoms of alcoholic intoxication must not be lightly dismissed. Under the circumstances that prevail at the time of the usual examinations for intoxication, following an accident, shock or arrest, confusing functional disturbances are apt to occur. But any acute febrile disturbance, many

* From the Cincinnati General Hospital.
* Read before the Section on Pathology and Physiology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

general diseases or local disorders, and particularly innumerable lesions of the central nervous system may give rise to symptoms similar to those of acute alcoholism. Although the differentiation between all of these conditions and acute alcoholic intoxication may readily be made in the majority of cases by the absence or presence of other signs or symptoms essential for the diagnosis, this is not always the case, and a man suffering from one of these other conditions may, and frequently does, suffer also from the effects of drinking alcoholic liquors. The odor of alcohol is also misleading, since it may be missed in the presence of other strong odors, and may be present long before enough alcohol has been taken to produce demonstrable effects.

It is a matter of common knowledge that some men can drink many times as much as others without showing the same effects. This tolerance has been found to depend mainly on a slower rate of absorption of the alcohol, as it can be increased by dilution or food in the stomach, or by other factors slowing the rate of absorption. In part, however, it may be due to the increased rate of oxidation of the alcohol, though this has not been conclusively proved. Numerous investigators, however, have found that the physiologic and psychologic state of the patient are directly proportional to the concentration of alcohol in the tissues, and the alcoholic content of the blood, therefore, has been suggested as an index to the state of intoxication of the individual. And since the concentration of alcohol in the urine is usually equal to that in the blood, and the amount in the expired air also bears a constant relationship to that in the blood, the alcoholic content of these excretions may also be determined for the purpose of evaluating the degree of alcoholic intoxication.

During the past year more than 300 such determinations were made on patients suspected of alcoholic intoxication who were brought to the Cincinnati General Hospital, by methods which were particularly devised for this purpose. For ascertaining the concentration of alcohol in the urine, blood or spinal fluid, 1 cc. of the specimen was placed in a test tube and a current of air bubbled through it and then through 5 cc. of a one-third per cent solution of potassium dichromate in 50 per cent sulphuric acid, for ten minutes, both tubes being immersed in a boiling water bath. The color change, from reddish yellow to greenish blue, was then measured by comparison with a series of standards previously made up with known amounts of alcohol. For determining the concentration of alcohol in the breath, 2 liters of expired air, collected in an ordinary football, was bubbled through 5 cc. of a hot solution of the one-third per cent solution of potassium dichromate in sulphuric acid and the color change measured by comparison with the standard solutions. Many precautions and control tests were taken to secure accuracy and reliability in these tests.

The results of these determinations showed a high degree of correlation with the incidence of intoxication in the patients. No patient having less than 1 mg. of alcohol in 1 cc. of urine was pronounced intoxicated, but more than half of those with from 1 to 2 mg., three fourths of those with 3 mg., and almost every patient with 4 mg. or more were so diagnosed. The diagnosis of acute alcoholic intoxication was made only in the presence of unmistakable evidence of loss of control of speech and movement resulting from alcoholic imbibition, and has been uniformly sustained by the Cincinnati traffic court in the several score of cases that have come before it.

Further study of the clinical observations shows even more convincing relationship between the concentration of alcohol in the urine and the physiologic effects. Nearly half of the thirty-five individuals having less than 1 mg. of alcohol per cubic centimeter of urine admitted drinking and had the odor of alcohol on the breath, but only a few showed the flushed face, dilated pupils, affected gait or thickened speech of alcoholic intoxication. The so-called stimulating effects of alcohol, usually ascribed to the removal of psychic inhibitions, however, were often noted in accelerated speech and movement, with a diminution of self-criticism, deliberation and judgment.

Most of the forty-five patients having from 1 to 2 mg. of alcohol in 1 cc. of urine had a marked odor of alcohol on the breath, and more than half of them had dilated pupils and a flushed face. Loss of self-restraint, manifested in loud, boisterous speech, reckless boasting and profanity, was frequently encountered, and a staggering gait, swaying on standing, a confused or slurred speech and general clumsiness in action were found in the majority of them.

TABLE 1.—*Five Hundred Examinations for Drunkenness Classified by Alcoholic Content of Urine*

Mg. alcohol in 1 cc. urine..	0	1	2	3	4	5	*	†	‡
Total number of patients...	35	45	58	64	35	13	250	250	500
"Acute alcoholic intoxication"	0	25	38	56	34	13	166	174	340
"Insufficient evidence".....	35	20	20	8	1	0	84	76	160
Complications	20	23	21	27	11	3	105	111	216
Kept at hospital.....	19	14	29	38	25	13	138	133	271
Less than 35 years old.....	9	20	21	20	5	5	80	91	171
35 years and older.....	11	19	35	36	23	5	129	128	257
Admit drinking.....	15	26	30	30	15	2	118	102	220
Alcoholic odor on breath....	14	37	49	49	32	13	194	198	392
Flushed face	5	23	29	28	8	4	97	91	188
Pupils dilated	7	25	20	27	12	5	96	109	205
Pupils contracted	3	6	14	8	5	5	41	20	61
Gait fair.....	9	13	15	6	0	0	43	22	65
Staggering gait.....	4	22	24	28	14	2	94	81	175
Unable to stand.....	0	0	14	11	18	11	54	69	123
Sway when standing.....	6	26	22	29	14	2	99	68	167
No sway when standing....	7	6	9	2	0	0	24	12	36
Incoordinated	3	21	25	30	23	13	115	122	237
Coordination fair	10	11	14	4	0	0	39	17	56
Speech fair	9	12	13	1	0	0	35	21	56
Speech slurred	3	7	7	11	4	0	32	29	61
Speech confused	2	16	16	25	19	2	80	69	149
Unable to speak.....	0	0	11	6	12	11	40	45	85
Comatose	0	0	8	8	11	11	38	57	95

* Total known.
† Unknown.
‡ Grand total.

The fifty-eight patients having from 2 to 3 mg. of alcohol in 1 cc. of urine showed an increase in the incidence of nearly all the symptoms of alcoholic intoxication, although even here nearly one fourth of the patients were able to walk without staggering and to speak clearly. An amiable garrulousness or a suspicious pugnacity was frequent; incoordinated, fumbling movements of the hands with the familiar difficulty to insert a key in a keyhole or to button coat were usually noted, and the flushed face, dilated pupils and alcoholic odor were the rule.

There was little difficulty in diagnosing intoxication in the sixty-four patients having from 3 to 4 mg. of alcohol in 1 cc. of urine, as only one of these could stand without swaying and only one could speak clearly. The mental obfuscation was intensified; incoherent confused speech and general muscular incoordination were almost universal, and several of these patients were in actual stupor.

Narcosis and stupor were the rule in the thirty-five patients having from 4 to 5 mg. of alcohol in 1 cc. of urine. The dilated pupils here gave way to a marked constriction, sometimes even pin-point, and sometimes unequal. The flushed face was replaced by pallor; the

breathing was stertorous and slow; the breath was heavily laden with alcohol and the patients showed marked loss of consciousness, with inability to stand unsupported, and sluggish response to questions and other stimuli.

The thirteen patients with more than 5 mg. of alcohol in 1 cc. of urine were all in a state of actual coma, with inability to respond to stimulation, and slow shallow respiration, cold skin and general inertness. As the concentration approaches 6 mg. of alcohol per cubic centimeter of urine, the danger of death from alcoholic asphyxia is neared.

Similar observations were obtained on determination of the alcoholic content of the breath, since, as soon as the disturbing factor of alcoholic liquor still in the mouth is removed, which occurs usually within fifteen minutes after imbibition, in the absence of hiccuping or belching, the alcoholic content of 2 liters of expired air is a little greater than that of 1 cc. of urine. Thus, though less than one sixth of those having less than 1 mg. of alcohol in the breath were found to be intoxicated, more than half of those having from 1 to 2 mg. and nearly every one having more than 3 mg. were so pronounced.

TABLE 2.—*Clinical Observations in Two Hundred and Fifty Patients: Percentage Incidence by Alcoholic Content of Urine*

Mg. alcohol in 1 cc. urine.....	0	1	2	3	4	5	Total
% patients examined.....	100	100	100	100	100	100	100
% "acute alcoholic intoxication"	0	56	66	88	97	100	67
% complications	57	50	36	42	31	23	43
% kept at hospital.....	54	31	50	60	71	100	55
% over 35 years old.....	55	49	62	64	84	50	60
% admit drinking.....	43	58	53	47	43	15	47
% alcoholic odor.....	40	82	84	76	91	100	78
% flushed face	18	50	50	44	23	31	39
% pupils dilated.....	25	56	34	42	34	38	40
% incoordinated	23	66	86	89	100	100	78
% staggering gait	36	60	45	62	44	15	48
% unable to stand at all.....	0	0	26	27	56	85	29
% sway when standing.....	46	81	54	68	44	15	59
% unable to speak.....	0	0	23	14	34	85	21
% speech confused	14	45	34	58	55	15	43
% speech slurred	22	20	15	25	11	0	17
% comatose	0	0	15	13	31	100	15

The concentration of alcohol in the spinal fluid in every case examined closely approached that of the urine. Increased pressure was generally found when the alcoholic content was greater than 3 mg. per cubic centimeter, and the patients in these cases often roused following the puncture. The concentration of alcohol in the blood generally was about the same as that in the urine, but was sometimes a little lower. Gastric analyses showed a great variation, as was to be expected, being almost negative in the cases in which several hours had elapsed since the alcohol had been taken.

The alcoholic beverages which were responsible for the condition of these patients varied widely, from expensive imported or prewar stock to the cheapest and most repulsive "moonshine," home brew and denatured alcohols. The quantities imbibed admitted, of course, of no accurate measurement, though it is evident that at least an ounce and a half (45 cc.) of absolute alcohol, corresponding to 3 ounces (90 cc.) of 50 per cent whisky, must have been taken for each milligram per cubic centimeter appearing in the urine, or nearly half a pint to produce the fifth stage of true alcoholic coma. The manifestations noted after any of these liquors, however, were so uniformly related to the alcoholic content of the urine or breath that no attempt was made to classify them on the basis of the responsible liquor.

Since the concentration of alcohol in the urine and breath is so consistently related to the degree of acute alcoholic intoxication and the consequent behavior of the subject, and since the diagnosis of drunkenness from the clinical evidence alone is open to many sources of error and difficulty, it is concluded that the examination of patients to determine the state of intoxication should in every case include some quantitative determination of the amount of alcohol present in the urine, breath or body fluids. It is not expected that this test should supersede entirely all the other clinical examinations, but, as any other laboratory procedure, it must be interpreted in the light of the observations in the individual case. A study of the results in the series of cases just reported, however, as well as those recorded by many other observers, notably Nicloux, Widmark, Schweisheimer, Miles, Mellanby, Southgate and Carter, and Gettler and Tiber, leads to the conclusion that the alcoholic concentration of the urine, breath or tissues is the most reliable single factor in arriving at a correct conclusion as to the degree of intoxication of a patient.

ABSTRACT OF DISCUSSION

DR. HAROLD L. HIGGINS, Cincinnati: Dr. Bogen is to be congratulated on his method for determining alcohol in the breath as a means of measuring the degree of intoxication. However, in spite of the simplicity and the accuracy of his method, one has to remember that common sense and clinical sense have to be combined in using it as a diagnostic measure or in medicolegal procedure. Alcohol may merely contribute to coma and not be the real cause. Thus, the patient may have had an attack of apoplexy or may be in diabetic coma and still have taken some alcohol. Also, following accidents, alcohol is not infrequently given to the victim as a stimulant or to allay pain. But as an aid in diagnosis, these methods will prove very valuable. The use of expired air is especially valuable as it is easily obtained, whereas it is sometimes difficult to obtain other fluids, such as blood, urine or milk. In diagnosing the cause of coma, the breath can be used for determining the amount of acetone and the amount of alcohol present. Theoretically, Dr. Bogen's paper depends on the assumption that the alcohol in the breath is proportional to the alcohol in the blood, and that the alcohol in the blood is proportional to the amount of alcohol in the brain. Experimental work seems to point to the fact that alcohol spreads over the body essentially by diffusion. The present feeling is that the alveoli of the lungs have no excretory function and that gaseous exchange is wholly by diffusion, and it would appear that the same applies to alcohol. Dr. Bogen raised the question of why individuals react differently to the same amount of alcohol. In a number of experiments on men, I have not found any appreciable variation in the rate at which alcohol was burned, provided the activity of the subjects was the same. In considering why some of Dr. Bogen's patients, with a given percentage of alcohol in the urine, were much more intoxicated than others, one must remember that the pharmacologic effects of alcohol may be divided into two parts: first, the direct chemical action of the alcohol on the brain cells, and, second, its direct action through the reaction of the body, by edema or otherwise, to the harm which has been done to the brain cells. Whereas, the former may be relatively constant in different individuals, the latter is not necessarily constant.

DR. M. W. LYON, JR., South Bend, Ind.: Is the test absolutely specific for alcohol or will it react in the presence of acetone and ether?

DR. ROY G. HOSKINS, Columbus, Ohio: It seems that the essential issue raised by Dr. Bogen's paper is the question of empiricism versus exact science. There has been a contest between these two for an indefinite period, and historically the exact science invariably sooner or later wins out. When one thinks of the importance of this subject the world over, it seems rather remarkable that we have been content to go so long on a purely empiric basis rather than to get the problem under exact control on a scientific basis.

DR. EMIL BOGEN, Cincinnati: Of course, this test shows the presence only of volatile reducing substances. It is not specific. Almost any reducing substance will produce the change in color of potassium dichromate, and there are other such substances present in the body, but most of the other substances are not volatile, and, as may be noticed, we are using in this test only volatile constituents. In each case we have tested the individual for acetone and, whenever acetone was present, the air was passed through a solution to remove the acetone before it was passed through the potassium dichromate reagent. The temperature was never over 100 F., so we did not expect other substances to be present. Quite a number of controls were run on normal subjects; that is, on patients in the hospital who we felt certain had not had alcohol, and we found no such substances. Of course, it is known that there is some volatile reducing substance in the normal tissue. The concentration, as Dr. Gettler recently reported, is in the neighborhood of one one-thousandth of the dimensions used in this test, and therefore that amount cannot be expected to interfere with this test. The concentration of alcohol in the different tissues of the body varies somewhat, probably mainly according to the differential solubility of alcohol in those tissues; thus we would expect a greater concentration of alcohol in the fatty tissues or the brain than in the bone or tissues which do not ordinarily absorb alcohol readily. In one case we determined at autopsy the alcoholic content of different tissues. We found that the concentrations in the spinal fluid, blood and urine were pretty close. I want to emphasize that this test is merely a measurement of the amount of volatile reducing substances found in the breath, urine and other specimens. From this we must determine the probable relationship of the concentration of volatile reducing substances in these tissues to that of alcohol, and the relationship of the alcohol in the breath or tissues to the state of intoxication of the patient. In this series of more than 300 patients, the relationship seems to have been quite constant.

TREATMENT OF TRACHOMA BY SURGICAL DIATHERMY

PRELIMINARY REPORT *

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LENINAKAN, ARMENIA

Trachoma has probably been prevalent in the Russian Caucasus since the dawn of history. There are no available statistics as to its present incidence, although eye diseases are officially recorded as affecting 5.1 per cent of the population. It is certain that much trachoma goes unrecognized. In the Near East Relief Clinic in the city of Leninakan (old Alexandropol), conducted for children outplaced from orphanages and living in the city, I found sixty-nine cases of trachoma among 284 children, approximately 24.3 per cent. Owing to the close contacts inevitable in orphanage life, the disease is more prevalent than among the population at large. In a trachoma survey of the Near East Relief orphanages at Leninakan (Alexandropol) in September, 1926, I found among 5,220 children 3,868 cases of trachoma, or 74.1 per cent.

I have seen here none of the so-called noninflammatory cases of trachoma. Cases which in the beginning pursued an indolent course, showing only follicles in the retrotarsal fold, would sooner or later develop inflammation. I believe the follicle to be the essential trachoma lesion. The cases of follicular conjunctivitis seen here sometimes develop rather large follicles which differ from the trachoma follicles in appearance and in distribution, being white, having a denser capsule, and containing a liquid; whereas the trachoma follicle is of faintly yellowish tinge, having a more friable capsule (unless of long standing) and containing a gelatinous material.

For several years the copper sulphate pencil was the principal therapeutic dependence, but as certain local changes in organization last summer brought about a greater congestion in the orphanages, with consequent increase of trachoma prevalence, it became imperative that more effective treatment be undertaken on a large scale. With this in view, a number of native nurses from the Training School of Near East Relief were taught to perform grattage, and within a short time 100 grattages a day were being done. Almost at once this began to decrease both the incidence and the severity of the cases. The grattage room has been in use since that time.

It was known, however, that for many cases this method could be only palliative, and in September recourse was had to a new diathermy apparatus which had arrived from America. As this agent has proved more successful in our hands than other surgical methods such as lid massage and tarsectomy, it is hoped that others may find it of as great value.

Owing to our having but two diathermy machines, and as each operation occupied about ten minutes, it was not found practicable at first to employ the method on a large scale. My experience with grattage in the U. S. Indian Service, however, had indicated that the principal difficulty in effecting a cure was the obstinate recurrence of chains of follicles springing from a small area in the retrotarsal fold near the caruncle. Desiccation appeared to be better adapted to destroy this nidus than mechanical measures. Therefore, on July 13 of this year we began to confine the operation to a rather intensive desiccation of a triangular area about one-fourth inch long from the inner corner of the upper lid outward on the retrotarsal conjunctiva, paying particular attention to small inflamed ridges originating in the semilunar fold. This fold, which is said to be a rudimentary nictitating membrane, a retrogressed tissue, is, perhaps for that reason, especially susceptible to this infection. The operation is followed the same day by grattage over the remainder of the lid, the latter process being effective in clearing the follicles from the major portion, and being at the same time somewhat less painful. By adopting this combined method we have been able to increase the number of desiccation treatments to fifty a day. A good scar in the small area referred to renders reinfection less likely, as trachoma nearly always commences in this location. A number of treated cases seen thus far incline me to the belief that the combined method will prove effective, although it is too early to make predictions.

The results of desiccation as originally performed on five children last September were rather dramatic. All these children had had trachoma for several months, and following operation were discharged as apparently cured within three weeks. Subsequent cases have shown greater variability in results, some having required two or three such treatments, but in practically all cases there has been marked improvement in the condition of the lids and in symptoms.

March 1, fifty cases a week were listed for treatment, and this was carried out until July 13, when the combined method was undertaken. May 25 an examination of 129 of the March group showed: trachoma, forty-eight; apparently cured, fifty-one; inflammation not subsided (doubtful), thirty.

* From the Physiotherapy Department, Near East Relief.

Two of the children receiving desiccation treatment in September, after treatment of the retrotarsal folds, refused continuation of the operation, and the conjunctiva tarsi, although inflamed and covered with elevations, was untouched. An examination in October showed the lids apparently free from trachoma. I was prevented from following up this matter at the time, owing to the occurrence of a destructive earthquake in this region,[1] but on March 10 of this year I found seven patients showing marked inflammatory changes on the tarsal plate of both upper lids, but whose retrotarsal folds had apparently cleared up under operation. These were put under observation without treatment, and examination, June 15, showed a smooth white cicatrix over the tarsal plates of four of the children and in one eye of the fifth child, whose other eye showed on the tarsal plate of the upper lid a greater degree of inflammation than previously; but it was found in this case and in that of the two remaining children that the follicles had again proliferated in the caruncular area and had spread up over the edge of the tarsal plate. This tendency to spontaneous recovery of the conjunctiva tarsi may profitably be considered by those ophthalmologists advocating wholesale tarsectomies for the relief of trachoma.

The technic of our original operation is as follows; the only subsequent modification made is in limiting the area treated, as mentioned above:

The patient reclines on the table. Adequate light is provided. Cocaine hydrochloride is applied to the conjunctiva in powdered form with a cotton swab. The spark gap of the diathermy apparatus is set just low enough for the spark to jump the gap of the three controls, the active electrode set at low voltage, the knife lever raised to the second notch. With our first case the indifferent electrode was placed in the patient's hand, but it was found that, by making an electrode out of the metal retractor holding back the lid, an increased activity of the spark was obtained. Our lid retractors have two prongs on the end distal to the retracting portion; these are bent to form rings, and the cord clip is attached. The point electrode is made to touch lightly and repeatedly the follicles until they are blanched to their depth. The conjunctiva tarsi is untouched. When the entire retrotarsal fold is given the spark, the point travels lightly across the apparently follicle-free areas also to dry the surface. The point electrode is brought barely in contact with the conjunctiva except where large follicles are encountered, when it is held quite firmly against them. After-treatment consists of mercurochrome-220 soluble aqueous solution, 2 per cent instillation, followed by liquid petrolatum, 1 drop in each eye. This should be continued thrice daily for a week or ten days, although in handling large numbers of patients we have had no untoward results in giving the oil and mercurochrome once daily for three days.

REPORT OF CASES

The cases here reported are taken both from the orphanage and from the outside clinic.

CASE 1.—H. A., a well nourished girl, aged 13, seen, Aug. 26, 1926, had not had any eye trouble until about six months before, when she noticed that the lids seemed to stick together in the morning on waking; there was redness, itching and some pain in the lids, for which she consulted a physician at the city hospital, who told her that she had trachoma and prescribed some eye drops. This was followed by slight symptomatic improvement for a short time, but the pain and itching had been present most of the time since then. Examination revealed slight ptosis of both upper lids, photophobia and undue lacrimation. The bulbar conjunctiva was slightly injected. In the retrotarsal fold were clumps of follicles, especially thick at the inner canthi. Along the upper edge of the tarsal plate on each side was a line of inflamed papillae, and over the right tarsal plate were many clumped papillary elevations. No follicles were visible in this area on either side. Individual blood vessels could not be traced. The lower lids appeared normal.

The patient had no treatment except mild silver protein until September 1, when she was given surgical diathermy.

September 4, there were white areas representing the slough of follicles in the fornices. The conjunctiva tarsi appeared blanched. There was still considerable swelling of the upper lids.

September 6, no follicles were seen in the retrotarsal fold, but numerous punctate hemorrhages were visible beneath the conjunctiva in this location. The tarsal conjunctiva still had a blanched appearance.

September 13, the whole conjunctiva was slightly reddened. No distinct papillae could be seen over the tarsal plate.

October 14, the conjunctiva of the retrotarsal folds and over part of the tarsal plates was of a dead white aspect, quite smooth, apparently scar, shading into normal tissue. There were no subjective symptoms. There was probable recovery.

CASE 2.—S. N., a well nourished girl, aged 18, seen, April 20, 1927, had been treated for trachoma since some time in 1922, principally with bluestone. She had grattage, March 26. There were no subjective symptoms other than a burning sensation beneath the lids. Examination did not show photophobia or ptosis. The bulbar conjunctiva was slightly injected. On the tarsal plate of both upper lids were a few large, knobby, inflamed papillae. Over other parts of the plates were uneven patches of white scar tissue. There were small clumps of follicles near the caruncles in both eyes extending up over the inner aspect of the left tarsal plate. The lower lids were normal.

April 22, desiccation treatment was given over all areas of the fornix conjunctivae of the upper lids except old scar tissue.

April 29, no follicles were seen in either eye. The fornices appeared clean. There were slight red streaks on the tarsal plate near the inner canthi.

May 13, no follicles were visible. Inflammation had subsided. There were no subjective symptoms.

July 28, there had not been any recurrence.

CASE 3.—T. M., a rather poorly nourished, poorly developed girl, aged 15, seen, Feb. 2, 1927, gave no history of trachoma and stated that her eyes were all right. Examination showed scarred areas over the conjunctiva of both eyes. Groups of follicles were scattered over the fornices of both eyes, upper lids, especially at the inner canthi. There were a few small papillae over the plates. There was a dull red flush over the tarsal area. The vessels were obliterated.

March 18, surgical diathermy was given.

April 30, no follicles were seen. There were slightly inflamed streaks over the tarsal plates of both upper lids.

May 25, there was apparent recovery.

CASE 4.—A. V., a well nourished boy, aged 18, seen, Feb. 23, 1927, had had trachoma since October, 1926. Examination showed almost uniform inflammation over the entire inner surfaces of both upper lids, the tissue over the tarsal plates being of the "velvet" type, with papillary elevations thickly distributed. There were groups of small follicles in both inner canthi. The caruncles were hypertrophied. There was a similar appearance over both lower lids.

Diathermy was given, March 31. The patient was not seen again until May 4. At this time all inflammation had subsided. No papules were seen over the tarsal plates. No follicles were found in the upper lids. There were still a number of inflamed patches containing follicles in both lower lids, but he did not seem to know whether these were treated.

1. This earthquake occurred, October 22, with shocks continuing at intervals through December. Drs. Sisson and Kalloch gave their attention to the requirements of the emergency, interrupting for the time all other work. The disaster destroyed 12,000 homes in the city of Alexandropol and partially destroyed twenty-seven villages, with many casualties and 400 deaths.

CASE 5.—S. T., a well nourished girl, aged 16, seen, Feb. 2, 1927, gave no previous history of trachoma, and there were no subjective symptoms at the present time. Examinations previously made recorded her as having no trachoma, but this may have been a clerical error. Examination revealed bars of follicles in the fornices of both upper lids. There was considerable redness over both upper tarsal plates. The lower lids were normal. The vessels were indistinct on the upper tarsal plates. Surgical diathermy was given, March 24, over the retrotarsal folds. When the patient was seen, April 25, no follicles were found. The conjunctiva tarsi appeared normal. Examination, July 26, did not reveal any change.

Clinical Notes, Suggestions and New Instruments

PSEUDOHYPERTROPHIC MUSCULAR ATROPHY IN AN ADULT

WINGATE M. JOHNSON, M.D., WINSTON-SALEM, N. C.

Mrs. R. P. F., aged 34, the mother of three healthy children of 2, 9 and 12 years, was in good health until a year ago, when she began to experience muscular weakness, especially of the legs. This weakness has progressed until now she cannot rise from a sitting or lying position without assistance.

Physical examination revealed a typical picture of the pseudohypertrophic type of musclar atrophy. The legs were quite large in proportion to the rest of the body, and felt firm to the touch. The abdomen was prominent, on account of the marked lordosis position when standing. The muscles of the arms and chest were shrunken. The tendon reflexes were absent. On attempting to rise from a chair, the patient assumed the attitude, so familiar in textbook pictures, of climbing up on her thighs with her hands. Even then she had to have assistance from her husband before she could stand, though when once on her feet she could walk with the waddling gait characteristic of the disease.

Other positive findings were poor teeth, diseased tonsils and an enlarged thyroid gland. The pulse rate was 96 and there was a slight tremor.

I am reporting this case because of the rarity of its onset so late in life. No history could be obtained of any other cases in the patient's family.

O'Hanlon Building.

A NEW RECORDING SPHYGMOMANOMETER

DANIEL R. BARR, M.D., ROCHESTER, N. Y.

The desirability of automatically recording blood pressure in clinic routine has long been recognized, and with the advent of the new Tycos recording sphygmomanometer this seems at last to have become entirely practicable.

This latest development in the mechanical determination of blood pressure enables one to do away entirely with the stethoscope, palpating finger and indicating hand, thus eliminating completely the personal equation, and further gives a permanent record of unquestioned accuracy. Its service to the anesthetist, surgeon, diagnostician and general practitioner is well nigh incalculable, as it is also to the specialist in insurance medicine.

The instrument consists of a rigid reservoir of very light metal into which is set an air-tight collapsible chamber, also of metal, which expands and contracts with the pressure communicated to it from the rubber cuff encircling the arm. Attached to the upper member of this chamber is a bell crank assembly which gives a circular motion to the chart disk as the pressure in the reservoir decreases. The chart disk carries a circular chart which receives the curves written by a pen in response to the pulsations of the artery. Thus no clock or motor is used to drive the kymograph, and as the calibrations are printed on the chart the position of certain definite points in the curve gives the reading in millimeters of mercury directly from the chart.

The curve is traced by a pen actuated by a small diaphragm receiving its impulses directly from an independent cuff on the arm. The oscillations are written as a series of spikes, the first one of which indicates the systolic pressure and a certain point occurring later on the tracing gives the diastolic reading. The pulse pressure is calculated in the usual way.

The application of the instrument does not differ materially from the ordinary sphygmomanometer. The cloth sleeve containing the separate rubber cuffs is placed on the arm above the elbow, care being used to assure the placing of the upper or filter cuff proximal to the lower or recording cuff, which should have its lower margin just above the bend of the elbow.

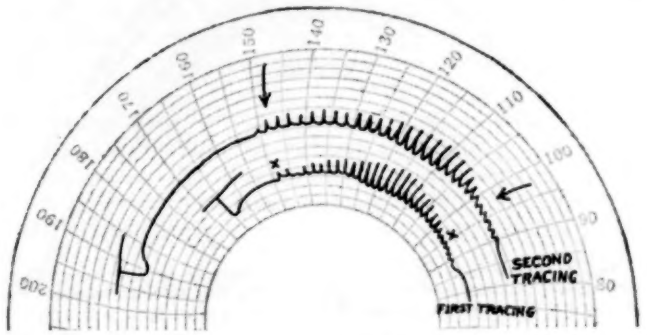


Fig. 1.—Characteristic curve: second tracing, systolic 147, diastolic 95; first tracing, systolic 147, diastolic 94.

Each cuff has its own circuit through the instrument. The upper cuff communicates with the tank or reservoir and also with the oscillometer in a way to prevent the first waves from impinging on the upper border of the recording cuff and obscuring the criterion of systolic pressure. The lower cuff is connected directly to the oscillometer diaphragm and to a minimal value in such a way that it transmits to the pen the volume changes of the artery occasioned by the pulse.

After the sleeve has been adjusted to the arm, the pneumatic cuffs are inflated with air by means of a small bulb until the circulation in the arm is entirely cut off. This can be determined by placing the bell of a stethoscope over the artery just below the sleeve and observing the point at which the sounds cease, or inflation may simply be carried to a pressure which experience would teach us was in excess of the arterial tension of a given patient. Should the pressure not be sufficient to obliterate the lumen of the artery, it is only necessary to trace an extra curve when it can be carried higher.

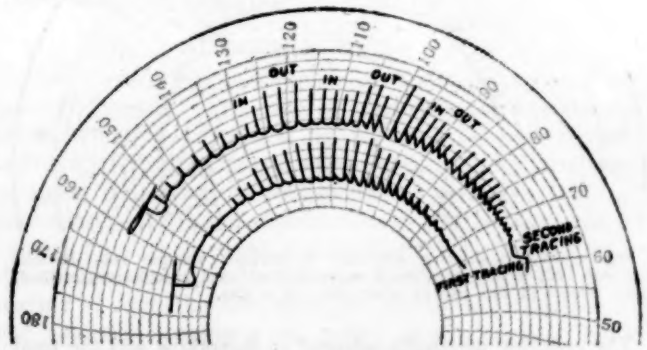


Fig. 2.—Curve showing influence of respiration and other factors—first tracing normal respiration, systolic 137, diastolic 85; second tracing forced respiration showing rise and fall of spikes; a gap is noticed just below 100; rate somewhat irregular.

After the system has been sufficiently inflated, a valve is opened and deflation begun. As soon as air flows through the leak, the chart begins to revolve at a rate dependent on the size of the leak. The pen traces a smooth line (if the circulation has been entirely cut off) for some distance; then at the point where the blood passes under the filter cuff a noticeable spike is seen to rise above the line, pointing toward the periphery of the chart. This represents the systolic pressure and will coincide exactly with the first sound heard on auscultation. The rotation of the chart is so synchronized with the

decrease in pressure in the filter cuff that the point on the chart as shown by the marginal calibration will be the precise measure of systolic blood pressure. This may be easily verified with the stethoscope. It should be remembered, however, that typical sounds are not always present in every artery. This is one of the points of superiority of the graphic method.

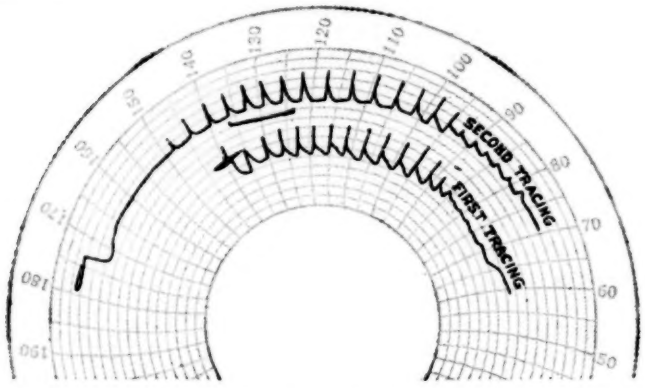


Fig. 3.—Curve showing sinus arrythmia; increase in rate from 125 to 135; second tracing, systolic 148, diastolic 92; first tracing, inflation was not carried high enough to obliterate artery.

Further deflation will give a series of spikes and a progressive widening of the space at the bottom of the wave, a notch supported on the descending limb and an increase in the height of the spike. As the zone of diastolic pressure is reached there is a distinct drop in the wave and the spikes become progressively shorter, more or less abruptly, depending on the elasticity of the vessel coats. At the point where the rapidly descending tops of the spikes become of more nearly equal length will be found the index of diastolic pressure. This coincides very accurately with the beginning of the fourth phase in the sound sequence. Depending somewhat on the rate, the first or second spike below the point described above will in some cases be a more precise reading. The difference is, however, only 1 or 2 mm.

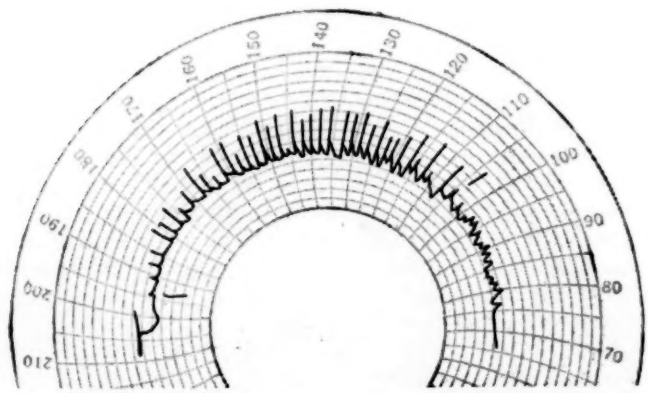


Fig. 4.—Curve showing auricular fibrillation; systolic 165, diastolic probably 102; in any case, much more accurate than auscultatory method; other factors in this patient affect this curve also.

The criterion originally adopted by Korotkow was the total disappearance of sound, and directions for identifying this point in the curve will appear later. This criterion is not recommended, however.

The anesthetist and the psychologist will be interested in the ability of the instrument to trace serial curves. Nine or ten of these may be written on the same chart. To accomplish this the first curve is written very near the center of the chart and, when finished, the cuffs are reinflated and a second tracing made a few millimeters nearer the periphery by turning the adjusting screw on the pen arm assembly through a small arc, thus causing the pen to write in a new path. By connecting the systolic points together with a line, the changes in the magnitude of the pressure can be easily represented. The same may be done with the diastolic readings. It should be noted that successive systolic pressures are usually lower and the diastolic pressures higher, as a result in the first case of the lessening psychic influence and in the latter of the stasis in the arm distal to the constriction.

As the instrument must be used on patients with widely differing pulse rates, the travel of the chart must be controlled so that the proper configuration can be given to each wave on any subject. After much experiment it has been found that the most consistent readings are secured by distorting the wave until it resembles a spike. A dial is provided on each instrument indicating the amount of leak necessary to produce this character in the wave. Before a tracing is made, the dial is simply turned to a figure corresponding to the pulse rate of the patient.

While the instrument is not intended to be used as a pulse wave recorder, many of the classic irregularities are characteristically shown. Our greatest interest in them, however, lies in their possible influence on the critical points of the curve with relation to pressure.

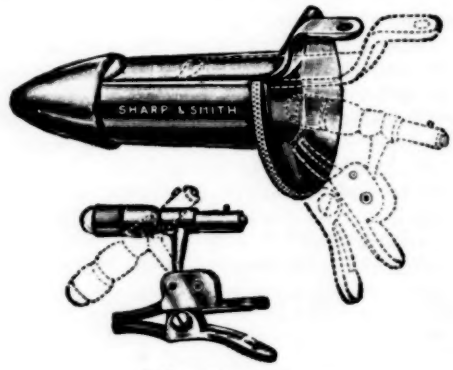
An inspection of the accompanying tracings will illustrate the several points mentioned. It would seem that in very few cases will any arrhythmia materially affect the reading of the pressure.

95 Ames Street.

A SELF-RETAINING ANOSCOPE

W. D. PENNINGTON, M.D., CHICAGO

This instrument is composed of three parts: (1) the anoscope proper; (2) a sliding bar; (3) an insulated detachable lamp. It is made in one length, 3½ inches, and is one half, three fourths or 1 inch in outside diameter.



Self-retaining anoscope.

The proximal end is provided with a conical flange 2 inches in diameter with a slot which permits easy withdrawal of a sliding bar, so that fields in the anal region to be explored and inspected are successfully exposed. The distal end is conical to permit easy introduction, and is so constructed that it provides shoulders, 2 inches from the proximal end, to prevent expulsion of the instrument while the operator is at work, thus eliminating the need of an assistant.

The lamp attached to an insulated device is anchored to the 2 inch flange in a position best to illuminate the field to be observed. The insulation prevents shock in the event of short circuit.

This anoscope differs from some anoscopes in that it is equipped with a light which admits adjustment for perfect illumination of the field to be explored, and from others in that it is self-retaining. While the exposed field of some anoscopes is limited, and in relation to the opening of the distal end, the area exposed by my instrument is in relation to the size of the fenestra. By use of the ordinary anoscope it is almost impossible to inspect the regions about the internal and external sphincters and sulcus where so many diseases (especially ulcers) have their origin, while my anoscope is so constructed that such fields are especially exposed and perfectly illuminated, making their examination and exploration readily and easily accomplished. It is made by Sharp & Smith, Chicago.

31 North State Street.

Special Article

THE PHYSICIAN'S INVESTMENTS

MERRYLE STANLEY RUKEYSER
NEW YORK

Physicians have long since freed themselves from the traditions of myth and magic in their own professional activities, but as investors they are still prone to place faith in the supernatural. If medical men would bring their scientific, questioning attitude into the field of finance, they would tend to cease to remain favorites on the sucker lists of security charlatans.

Inexperienced outside the biologic sciences, physicians are frequently thwarted by naively assuming that the casual lay outsider is equipped to give them financial information that will lead on to fortune. Sure thing tips on the stock market are on a par with "patent medicines" and quack remedies; they fulfil a human demand by promising much, but in the long run they are likely to yield only frustration and disappointment.

In this age of specialization, the medical man cannot afford to become a specialist in finance. But he can be consistent with the traditions of his own profession, and seek out the competent advice of the man who knows. The habit of self investment—blindly and incompetently—is intellectually equivalent to the self removal by the laity of an appendix or tonsils. If the patient seeks to do the surgeon out of a job and attempts to operate on a cafeteria basis, he is likely to have a rendezvous with death. Likewise, the M.D. who, without guidance, seeks to plunge into the unfamiliar waters of the great whirlpool of speculation and investment is flirting with financial mortality.

In response to the growing demand for expert advice, a new profession of investment counselors is springing into being. Physicians, whose training is in an essentially different field, can well afford to pay the moderate fee for good advice, rather than to assume the wider risks of acting imprudently. Well conducted investment banking houses give free counsel as a by-product of their business, and it is frequently excellent, although it is less likely to be disinterested than that of counselors who have nothing to sell except sound advice. Commercial banks, savings banks and trust companies are also reservoirs of financial facts and judgment, which may well be tapped by those who wish to put their surplus funds safely to work.

INVESTMENT TRUSTS

Of late, new instrumentalities for enabling the individual to invest by proxy have grown up in large numbers. In the last three years, nearly a hundred investment trusts have been established in this country to relieve the inexperienced investor of the obligation to invest his money on his own judgment. The investment trust, which, though a distinctly postwar development in this country, has a tradition of six or seven decades of successful operation behind it in England and Scotland, is an instrument whereby many small investors may cooperate, and avail themselves of the same expert leadership and facilities for investigation as wealthy men have previously exclusively enjoyed. In theory, an investment trust is a large pool of capital, raised from many investors, which has the advantages of extensive diversification of risks, expert initial selection of securities held in the portfolio of the trust, and continuous supervision of the holdings by specialists who keep in touch with changing developments. If investment trusts are capably and honestly managed, they are especially attractive for men in the medical profession, for they free them of the worry, bother and risks of investing on their own judgment.

It should be observed that investment trusts of late have been developing more rapidly than efficient managers can be trained, and they are not all equally worthy of confidence. With less of a history of success behind them than the foreign trusts, the American investment trusts have sought to capture the confidence of investors by setting up numerous legal restrictions on management. In fact, some American trusts give the management virtually no discretion at all after the original investments have been made, thus depriving participants of the benefits of continuous expert supervision in the light of changing conditions. Those which give the management discretion more nearly resemble the British type and are likely in the long run to be most serviceable, provided they are managed by experts of capacity and integrity. Before acquiring the securities of an investment trust, the physician should check carefully through disinterested sources on the capacity of the management. His own bank can be serviceable in furthering such an inquiry. He should particularly inquire into the personal history and reputation of the men who will handle the fund, for he is investing primarily in management.

An investment trust is a company engaged in the business of investing funds for others. It raises investable capital by selling its own securities—frequently both bonds and shares—to investors, and uses the proceeds to purchase stocks and bonds of manufacturing, public utility, railroad and financial institutions, and the obligations of governments. Thus, the investor who buys investment trust shares enormously simplifies his task. He chooses once, and thereafter his agents pass on investment risks for him. It is of course of paramount importance that he delegate his authority in the matter of choosing investments only to competent and trustworthy persons.

SAVINGS BANKS

There are other, less novel, methods of investing by proxy. The savings bank is virtually an investment trust, which is restricted by law to ultraconservative railroad, government, real estate and, in some commonwealths, public utility obligations. Where safety of principal is the sole consideration, the savings bank cannot be surpassed as a repository for thrift funds. As a class, it is prudently and safely managed. As a matter of fact, the savings bank should take a place in the financial program of every one. Savings bank funds are liquid and are immediately available in the case of necessity. These advantages are especially important for the physician whose earning power stops when he becomes physically incapacitated. The earnings of the business man, on the other hand, may go on even after his death or physical impairment, for he has created an institution which is to some degree independent of him.

The only objection to the savings bank is the comparatively low return—from 3.5 to 4.5 per cent. However, unless a person is skilled in financial matters or has found competent advisers, he can do little better than concentrate his reserves in the savings banks,

whose interest rate becomes relatively more attractive as the rental value on money in the market place tends to decline.

BANK AND INSURANCE SHARES

Another way to invest by proxy is through the purchase of bank stocks. In this manner the investor gets the banker to work for him, and he participates in the profits resulting from expert handling of investment funds by bankers, and from the making of loans and discounts and the performance of other banking services. Over the long pull, bank stocks, though usually offering a relatively low current return, have paid investors handsomely in market appreciation and in rights to purchase additional stock at par. In the last three years, prices of bank stocks have risen with unparalleled rapidity, and at these high levels the purchase of bank stocks—and of stocks in general—calls for the utmost discrimination.

Still another way to invest through experts is through the purchase of shares of insurance companies. The fire and casualty companies are far freer from restrictions as to what they may buy than the life insurance companies and banks. Accordingly, many of them have made extraordinarily profitable investments. Even while the business of fire insurance was proving itself unprofitable on account of inadequate rates, insurance companies in this field were showing handsome gains from the investment of funds.

All these indirect methods of investment help to minimize the investment choices of the busy physician, and to assure him of the services of experts. On the other hand, even where a physician decides to continue to invest on his own judgment, he can cut down the time required by availing himself of the security custodian services of a reputable bank or trust company in his community. For a moderate fee the bank will keep physical possession of his securities and clip interest coupons promptly, subscribe to new stock in accordance with valuable subscription rights, exercise profitable conversion privileges, and present bonds for immediate redemption after they have been called. The busy professional man will find it cheaper to pay a bank a small fee for these routine services than attempt to perform them himself. He can earn more money by attending to his own practice. Moreover, the physician, subject to call by his patients at all hours, without time which he knows is definitely his own, tends to procrastinate in the performance of duties in connection with his own estate. These delays are costly, and in the aggregate make it more expensive for him to do without banking services than to avail himself of them.

Where the physician takes only the custodian service, the bank performs routine acts in the care of securities, and the customer retains all discretionary power in the matter of new purchases, sales and exchanges. It is a compromise between self service and investing by proxy.

PHYSICIANS AND SPECULATIONS

The physician who invests on his own judgment should act on the basis of a well conceived program, not on hit and miss uncoordinated suggestions of well meaning patients, who may be unqualified to give financial advice. Mark Twain remarked that every month in the year was unlucky for speculation. Speculation is a subtle and elusive art, at which the overwhelming majority fail. Physicians are especially ill adapted to the vicissitudes of speculation, which requires independent specialized thought and the faculty for instantaneous action. Their work schedule does not permit them to hang over a stock ticker for five hours a day, and, if it did, it would reveal professional men in an undignified rôle which would not tend to heighten public confidence in them. The speculator who buys securities on margin, that is, partly on funds borrowed from the broker, is subject to call for additional margin at any time. It is distracting for an internist to be called from examining a patient by a nervous broker clamoring for more margin to protect an equity which has been effaced by a decline in prices. It is dangerous for a surgeon to be summoned from an operating room by a security dealer bent on the same mission. On the other hand, if medical men refuse to be disturbed during office hours, they are not in position to protect their hazardous stock market position. The only way out is to avoid margin speculation, an activity which is an expensive luxury for the ordinary layman, and one which is singularly ill adapted to the needs of the professional man.

It does not follow that the well informed medical man need place all his surplus funds in ultraconservative bonds. He should start with a foundation, or backlog, of securities of unquestioned safety, and, as his estate grows, he may assume somewhat larger business risks. If he ultimately begins to buy high grade common stocks, he should purchase them outright, so that he owns a part interest in a well managed corporation, which cannot be taken from him even if the stock market becomes subject to sudden sinking spells.

Before buying bonds, the physician should establish a balance of at least $1,000 in a savings bank. The physician requires larger cash bank balances than the ordinary salaried worker, who is assured of an uninterrupted, regular inflow of income once a week. For his part, the medical man knows only that his expenses, including rent for home and office, for a nurse, for maintenance of an automobile, and for the purchase of equipment and supplies, go on uninterruptedly, whereas his income comes in spasmodically and uncertainly. Accordingly, in order to maintain his credit standing, the physician needs a substantial working capital, most of which should be kept in a commercial bank or trust company, subject to check.

A checking account is virtually indispensable for a physician, because his income and outgo never balance themselves in point of time. Payments from patients come in either after the first of the month or after the first of the year. At such periods, receipts are larger than are needed for immediate expenses, and must be conserved for the meeting of overhead during lean periods when collections are nil or negligible. The physician needs a bank as a depository of his funds.

The affluent physician will find it necessary to keep a balance of at least $1,000 in his checking account, in addition to his savings bank account. Even this will prove wholly inadequate, unless the remainder of his surplus funds are at least in part invested in readily marketable securities, which can on short notice be turned into cash. Accordingly, a large share of the estate of a physician should be placed in securities which are listed on the New York Stock Exchange or some other large exchange, and which can under any financial conditions be quickly turned into cash.

Not only do payments from patients come in without definite schedule, but the actual earnings of physicians vary greatly through the seasons of the year. In most districts, the earning power of physicians slumps

during the summer season, during which many close up their offices and take vacations. On the other hand, midwinter is frequently an especially busy and profitable time. Epidemics, of course, definitely increase the earning power of physicians. In this connection, the significant point is that, unlike the person who works on a salary, the physician never knows in advance precisely what his earnings will be, and should be prepared to carry through dull periods by dipping into his surplus funds and selling securities if necessary.

In their rôle as investors, physicians are unique in other respects. They are natural investors, because after buying books and equipment they have no need for their surplus earnings in their own vocation. The average enterpriser or business man, on the other hand, is disposed to use a large proportion of his surplus earnings in his own venture. Many a business grows from small to large dimensions by a consistent policy of the reinvestment of surplus earnings. Incidentally, the asset value of the common shares of the United States Steel Corporation before the recent stock dividend rose from virtually zero to $280 a share as a result of this prudent policy of plowing back earnings into the development of the property.

After equipping his office, the affluent physician needs relatively little of his surplus earnings for his own professional activities. Accordingly, he inevitably is drawn to the investment market, with capital available to finance distant governments and great industries. That is another reason why stock pedlers are drawn to physicians, who have frequently been loaded down with shoddy financial wares.

INSURANCE FOR THE DOCTOR

Lacking earning power apart from his own efforts, the physician must seek a moral equivalent of going into business on his own initiative. If he were certain that his earning power would be uninterrupted for twenty years, the most prudent policy would be to concentrate on buying good securities in accordance with a definite schedule. However, a misdirected steering wheel or an insidious germ might within a month or a year terminate his tenancy on this planet, or through incapacitating him destroy his earning power. He can safeguard himself against such contingency by alliances with insurance companies. The physician is in peculiar need of accident, health and malpractice insurance, and should purchase noncancelable policies. Such insurance is partly selfish, but the physician with dependents will also want unselfish insurance for the protection of his heirs in case of premature death. Outside of term insurance, which is suitable only for limited purposes, the cheapest insurance is straight life, which physicians should concentrate on if their funds available for insurance are limited. If there is a superabundance of funds available for life insurance, the physician may properly consider policies with frills, such as the twenty payment life policy or the endowment policy. The relative worth of each cannot be determined until the date of death ceases to be uncertain. If a man were sure he would die within twenty years, the ordinary life policy would prove the cheapest. If, however, he knew that he would live more than twenty years, he could effect slight economies in buying the other types of insurance. But, with the life expectancy of the individual a matter of uncertainty, the straight life policy is the most alluring, for it gives maximum protection at the least cost.

Even life insurance is not purely altruistic, for if the policyholder survives his beneficiaries, he can turn his policies into cash which will finance his retirement in his old age. Even if they live, the insured can himself turn his policies into cash, through the surrender privilege. Life insurance appeals chiefly as a protection against premature death, but to the inexperienced investor it also affords a convenient and safe means of periodic saving. Even though the return to those who live long is relatively low, through insurance he is assured of the safety of his principal, which the ordinary investor, acting alone, frequently finds difficult to attain.

If the physician applies the teachings of his own profession, he will know that man is a creature of habits, and that good habits can be formed by conscious effort. The savings habit can be developed, and its continuance is facilitated by regular periodic savings. Besides insurance, the physician can contract to save specific amounts by joining a building and loan association. In New York, for example, the member who pays in a dollar a month will get $200 back in twelve years. Meantime, he can borrow from the association to finance the building of a home.

Physicians should follow a financial program, and decide where they wish to be financially in a given time. Compound interest will help them enormously. For example, if funds are invested at 6 per cent and if the interest is reinvested promptly every six months, money will double itself in less than twelve years. At 7 per cent money will double in ten years, and at 5 per cent in fourteen years. If a man of 30 desires an estate of $50,000 at the age of 60, he need save only $60.40 a month, provided he invests his funds at 5 per cent interest compounded semiannually.

TEN MAXIMS FOR PHYSICIANS ASPIRING TO FINANCIAL INDEPENDENCE

1. Formulate a financial program and stick to it.
2. Do not restrict your savings to what happens to be left over after expenses have been met. Take your investment fund from your gross income first and spend what is left over.
3. Get the maximum benefits from your purchasing power by wise spending in accordance with a budget.
4. Count on the workings of the compound interest table rather than on the uncertain principle of the lottery for the building up of your estate.
5. Do not let death, illness or accident interfere with the attainment of your financial objectives; insurance will take care of these hazards.
6. Be master of your finances rather than a slave to money.
7. Allocate part of your income for unselfish purposes.
8. Do not confuse thrift with niggardliness. Education and culture for yourself and your family are good investments.
9. Buy securities only from houses whose integrity you have checked through independent sources. When in doubt, deal directly through a bank. You should have an account in a savings bank before you begin to buy stocks and bonds. Remember that real bargains in securities are virtually never peddled by stock salesmen.
10. Either avoid speculation entirely or limit your commitments to what you can afford to lose.

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SATURDAY, OCTOBER 29, 1927

DIET AND THE KIDNEY

The fact that protein and its derivatives are the only source of physiologically available nitrogen, together with the preeminence of the kidneys as the main organs for the excretion of nitrogenous waste products, has naturally led to the advocacy of a low protein diet in cases of renal insufficiency. A correlated tendency of comparatively recent appearance is the suggestion that structural injury to the kidney with its accompanying functional disturbance may result from the use of rations rich in this food principle. In some types of nephritis, protein is actually excreted in the urine—frequently in surprising quantities. It is a pertinent question in the dietary management whether to allow this loss to continue without attempting to overbalance it by raising the protein content of the ration or to risk further harm to the kidney tissue by attempting to maintain a positive nitrogen balance. On one hand, the albuminuria indicates a constant loss made up partly by body protein; on the other, there is the possibility of augmenting an already existing pathologic condition.

The protein excreted in the urine is probably derived from serum protein and does not have its origin in the food. Peters [1] has emphasized the essential independence of the protein in the urine and the general nitrogen metabolism in edematous nephritis. He argues that, in patients with albuminuria, the loss of protein must be indirectly compensated by increasing this foodstuff in the diet, or a constant drain on body tissue protein results. On the other hand, when such patients are given an amount of dietary protein definitely above the minimum nitrogen requirement, together with a liberal energy allowance in the form of carbohydrate and fat, strikingly large quantities of nitrogen are stored in the tissues, accompanied by an actual decrease in the protein catabolized. Under these conditions the albumin excretion in the urine is unchanged and the nonprotein nitrogen in the blood is not altered. These observations suggest sound methods for maintaining a better physical state without, apparently, exaggerating the pathologic condition that is being treated.

The production of renal lesions by feeding rations rich in protein has been the subject of extensive investigation. The experiments, too numerous to mention, have been carried out under widely different conditions and with rather confusing results. A review of the literature bearing on this theme indicates that there were more studies showing failure to produce definite tissue changes on high protein foods than those with positive results. The most recent investigations on this general subject have been reported by Moise and Smith.[2] Working with white rats, they have resorted to unilateral nephrectomy as a means of intensifying the functional burden and have fed carefully controlled, adequate rations. Under these conditions, definite lesions have been demonstrated in mature animals at ninety, 120 and 150 days (corresponding to approximately one seventh to one fourth of the usual life span of the rat) after nephrectomy in rats on a diet exceedingly rich in protein (85 per cent). The more important pathologic changes are glomerular adhesions with and without partial fibrosis of the tuft, dilatation of the tubule and striking evidence of proliferation of the epithelial lining of the convoluted tubules and of Bowman's capsule. At the same time there was a marked increase in albumin, and numbers of casts appeared in the urine of these animals. As might be expected, the remaining kidney showed a striking enlargement. While one hesitates to translate the results of these rather extreme experiments directly to human experience, they serve to indicate the possibility, however remote of practical application, of inducing extensive renal injury by feeding excessive quantities of protein.

1. Peters, J. P.: J. Am. Dietetic A. **2**: 137, 1926.

BLOOD GROUPING OF PARENTS AND CHILDREN

When three babies are born to three different Smith families in the same hospital at about the same time and the mother of one claims she has been given the wrong child, can a study of the blood grouping in each family aid in establishing the relationship? The answer is, It *may*. The designation of the four blood groups as O, A, B and AB (corresponding to Jansky's groups 1, 2, 3 and 4) indicates directly the presence of the agglutinogens A and B, the agglutinable substances of the corpuscles. The inheritance of these blood groups, which is in accordance with the mendelian laws, depends chiefly on the factors A and B which are dominant to the factor O determining the absence of agglutinogens. The inheritance is not sex-linked and its application to problems of parental relationship is based on a single fact: an agglutinogen (A or B) that is present in a child must be present in at least one of the parents. It follows, then, that

2. Moise, T. S., and Smith, A. H.: J. Exper. Med. **46**: 27 (July) 1927.

parents belonging to combinations of groups O and O, O and A, or A and A, cannot claim a child in group B; parents in combinations of O and O, O and B, or B and B, cannot claim a child in group A; and parents in combinations of O and O, O and A, O and B, A and A, or B and B, cannot claim a child in group AB. The disclosure of any such impossible combination for the three persons concerned will serve to eliminate one of them from the parent-child relationship; and although the help thus afforded is quite evidently limited, it seems hardly reasonable that it should therefore be entirely neglected. The laws of certain countries which hold a father of a child responsible for its support have led to the more frequent use of the blood-grouping test. By it, a man accused of being the father of a certain child may be definitely excluded from such relationship and its encumbrous responsibility; or if by chance he belongs in a possible combination of groups, his personal identity is no more established than is that of any other man of that blood group, so far as that test alone is concerned.

Actual cases [1] illustrating the usefulness of the isoagglutination test in solving different problems of parentage may be cited. A woman and the man who she claimed was the father of two of her children were both found to be in group O. The children were in groups A and B, respectively; and since their agglutinogens could have been inherited only from the father (or fathers), the man in group O could not be the parent. In another case the identification marks were lost from two babies newly born in the same hospital. The blood grouping of the two families were as follows:

Family M	*Family P*
Mother A	Mother B
Father A	Father A
Child A	Child B

Since the child of group B could belong only to family P, the child of group A, which so far as blood grouping is concerned could belong to either family, must belong to family M.

Suppose, for instance, that the blood grouping for the three Smith families of the Cleveland case had been found to be as follows:

Smith Family 1	*Smith Family 2*	*Smith Family 3*
Mother O	Mother A	Mother A
Father B	Father A	Father B
Child B (girl)	Child A (boy)	Child A (boy)

The claim of the mother in family 1, that her child was one of the boys and not the girl accorded her by the hospital records, would then be discredited, for family 1 could not claim a child with the agglutinogen A. That such positive aid is possible, if the grouping is favorable, would seem to incur a responsibility for making blood-grouping tests in all cases involving a question of parentage. The hope of finding group combinations favorable for the solution of an immediate practical problem may be a special incentive, but even the least reward of contributing to the general study of blood grouping in families should encourage the use of the blood-grouping test at every opportunity.

1. Dujarric de la Rivière, R., and Kossovitch, N.: The Question of "Blood Groups" in Legal Medicine, Ann. de méd. lég. **7**: 390 (July) 1927.

THE ALLEGED PRESERVATION OF THE UNFIT

Progress and reform almost invariably tend to engender the antagonism of those who dislike changes. Liberalism in spirit and methods stirs up the fundamentalist who opposes innovations of thought or action. This is by no means always an unfortunate consequence; for progressives are notably liable to overstep the boundaries of wisdom in their enthusiasm. When the pendulum of reform has swung too far in one direction it tends to correct the excess by a corresponding movement in the reverse direction, until a position of equilibrium is attained. If the reactionary refuses to listen to argument, it nevertheless becomes the duty of the reformer to consider seriously all the charges that may be made against him, to meet them frankly and honestly, and to profit by any worthy criticism that they may legitimately disclose.

At the present time certain tenets of preventive medicine are being assailed by well intentioned critics. They regard the eugenic recommendations as being dysgenic in the long run. They look on part of the program of public health administration, particularly that which contemplates the thoroughgoing prevention of morbidity and mortality in infancy and early childhood, as thwarting the natural processes whereby the unfit are eliminated early from the race. They assail much that tends to subvert "the decimating influences of the ruthless forces of natural selection" with the charge that it is misdirected humanitarianism.

What are the fundamental aims of the forward-looking sanitarian today? They have been expressed by Falk [1] as the elimination of insanitary conditions in the environment of man, the provision of safe and adequate food supplies, the proper disposal of personal and community wastes, the reduction of communicable diseases, the specific immunization of individuals against certain parasitic diseases, and the education of the public in the practice of personal hygiene. There is nothing forbidding about this. Falk has made a statistical study in the Chicago Department of Health to ascertain whether the infant welfare program of a large American municipality has operated with dysgenic consequences instead of real betterment. His computations were designed to demonstrate the extent of the correlation between variations in the mortality of the infants born in a calendar year and the rates of mortality for the same infants in their second, third, fourth and fifth years of life. It was assumed that protection during

1. Falk, I. S.: Does Infant Welfare Work Operate to Preserve the Unfit? Am. J. Pub. Health **17**: 142 (Feb.) 1927.

infancy might show a beneficent effect on health in the subsequent years of life of the same groups. On the basis of the investigation Falk is confident that there is no evidence to substantiate the indictment of infant welfare work on the ground that it operates to preserve the unfit. Contrariwise, he states, it would appear that there have been adduced significant evidences that the saving of infant lives is followed by associated savings in the subsequent years of life. Indeed, much is opposed to the view that the savings in subsequent years of life would have been greater if there had been no reductions in infant mortality. Falk adds that everything that has come out of his statistical studies tends to emphasize the validity of a dictum enunciated many years ago by Farr: In addition to the immediate accomplishment in life saving, infant welfare operates to preserve fitness by reducing the incidence of damaging but nonlethal sickness.

Current Comment

ILLNESS RATES AND THE SEXES

Whatever may be the assumed implications of the much quoted assertion of Kipling that the female of the species is deadlier than the male, it cannot fairly be applied to the comparative vigor of the sexes of the human species. This is true, at least, so far as it refers to sex differences in the incidence of illness at the present time. In the Hagerstown morbidity studies, conducted over a period of years by the United States Public Health Service, the differences in the morbidity rates of the sexes were sufficiently marked to elicit comment from the investigators.[1] The annual morbidity rate from all causes, as observed during the twenty-eight months' period, was 970 per thousand for males and 1,262 for females. The ratio of the illness rate for females to that for males was thus 1.3 to 1. Since the age distribution of the populations of the two sexes was similar, this marked contrast cannot be due to differences in age. These rates, it should be noted, are for males and females of all ages, in all conditions of health, and living in an environment that, so far as could be determined, was in no sense abnormal or unusual. Lest it be assumed that the discriminating outcome represents a "freak" result for which life in Maryland or some local circumstance is primarily responsible, the Hagerstown statistics, it should be noted, are corroborated by evidence from widely removed communities. The extensive experience of the Leipzig local sick fund in Germany indicates that in the younger adult ages the female morbidity rate is in excess of that of the male, and that this excess diminishes as middle age approaches. The Leipzig experience carries the record farther and shows that in the older ages the female rate is actually lower than that of males, a result which is indicated by the more favorable death rate among females in this period of life, when illness in general is most fatal. Hence from the point of view of maintained good health it is advantageous to be a male until past middle life; thereafter the feminine superiority gradually makes itself more apparent with the passing of the years.

1. Sydenstricker, Edgar: The Illness Rate Among Males and Females: Hagerstown Morbidity Studies No. VI, Public Health Rep. 42: 1939 (July 29) 1927.

LEARNING BY SUFFERING

The platitude that "experience is the best teacher" is abundantly illustrated in the story of the management of the sick. Sometimes the advantage derived from previous encounters with a therapeutic problem demonstrates its usefulness in those cases which, in the absence of a better explanation, are classified as instances of idiosyncrasy. Unexpected reactions to drugs, unorthodox sequences in the course of a disease, undesired psychic responses to illness—such and many other situations call for resourcefulness on the part of the physician. Textbook assurances sometimes leave him in the lurch in such cases, and he begins to realize what is meant by the adage that one man's meat is another man's poison. It would be helpful to the student of medicine if he could acquire early in his training a better appreciation of the limitations that are placed on his theoretical expectations by the exigencies of practical performance. This is less true of the use of drugs than it is with respect to other aspects of ministration to the sick. It applies with peculiar force to prescriptions of diet to the invalid. It is not enough to know that the use of a quart of milk—admittedly an exceptionally wholesome food—each day without any other intake is certain to lead to depletion if this exclusive ration is continued for any length of time. An appreciation of calories and proteins, of food fuel, vitamins and mineral nutrients, will not insure that a prescribed meal will be palatable or even edible—the proof of the pudding is the eating. This wisdom seems to have been in the minds of the persons who have planned at one of the large medical schools that the students shall learn the practical aspects of dietotherapy by securing first hand information in the diet kitchen as well as at the bedside.[1] Those who have never calculated, prepared or eaten corrective diets can know very little of the problems involved in such work. It is a wholesome and often illuminating experience to study a patient's likes and dislikes, and his reaction to the diet. An innovation in the experiment at Boston consists in making the prospective physician plan meals to meet the needs that he foresees. The dietitian then selects one of the meals, usually the most unpalatable and poorly balanced one, and the student weighs out the food and eats the diet he has prescribed. This test is often a severe one, but it has been noticed that the students who have planned the meal eat it bravely, if not always with relish. One experience in attempting to consume many ounces of butter, cream and mayonnaise on a small helping of lettuce leaves a lasting memory destined to spare many a helpless future patient.

1. McGovern, Margaret: Practical Problems in Dietetics for the Medical Student, J. Am. Dietetic A. 3: 74 (Sept.) 1927.

EXPERT OPINION ON HAIR-DYES—TAKE IT OR LEAVE IT

As a result of the menace to the public health of certain cosmetics, legislation seems necessary to control the situation. The interests involved realize this. One hair-dye concern is in the market for expert opinion on the harmlessness of the chief ingredient used in its product. It employs a lawyer who writes to pharmacologists in different states, stating that his client manufactures a hair-dye containing a stated amount of ammoniated silver nitrate, and "desires a professional opinion that such percentage of silver nitrate in a hair-dye is harmless." The letter closes with the statement: "My client is, of course, prepared to pay for the service rendered to him in this connection." The opinion is needed "to meet any proposed legislation which would attempt to include silver nitrate among harmful ingredients." One of these letters came to the professor of pharmacology of a state university in the Middle West. He replied to the effect that, while, in his opinion, the use of the silver salt in the concentrations mentioned might not affect the general health, there was danger that discoloration of the skin (argyria) might result in certain instances, and that he, therefore, could not give an unqualified endorsement of the use of silver salts in a hair-dye. This opinion was sent to the New York lawyer with a modest bill. Another pharmacologist, also professor of that subject in another of the state universities, received a similar letter from the lawyer. He, too, gave an adverse opinion as to the use of silver nitrate in a hair-dye, and stated that the customary fee was payable not to him but to the business officer of the medical school with which he was connected. In both cases, the lawyer immediately replied that, since the opinions were unfavorable, they were useless for his purpose. The bills were ignored. The incident recalls a squib that went the rounds of the papers not long since:

"You've forgotten something, haven't you?" asked the lawyer.

"No, suh!" replied Sam.

"Yes, you have," continued the lawyer, "my fee for the advice I have given is five dollars."

"Yassuh," answered Sam, confidently, "but Ah ain't gwine to take yo' advice."

Practitioner of Future.—The practitioner of the future is to be a professional man and not a tradesman. He will see in his patients human beings whose distress appeals to his heart and not alone to his commercial instincts, his scientific or technical skill and pride. He will be well educated as to knowledge and methods. He will have the wisdom to use this knowledge in practice with a due sense of proportion of the value in the recognition of disease, of history, observation, and instrumental and laboratory examinations. He will not pretend to know all or to do all as rightly could our practitioners of fifty or seventy-five years ago. He himself will do much less than they did. He will recognize his own limitations and appeal oftener to the expert. Between him and the expert there will be the cordial relation of colleagues and not the antagonism of rivals for trade-gain or reputation. He will be no second-rate product of our medical schools, but one of first rank. He will be practical, but inspired to ever improving work by the spirit of investigation.—Herrick, J. B.: *California & West. Med.* **27**:184 (Aug.) 1927.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Fitter Families Clinic.—The Pulaski County Medical Society appointed a committee to conduct the Fitter Families Clinic at the state fair, recently, consisting of Drs. Darmon A. Rhinehart, Silas C. Fulmer and Wallace R. Richardson. This was the third Fitter Families Clinic held in this community. A physical examination with a history of their antecedents was made of the contestants, and bronze medals were awarded to the winners.

CALIFORNIA

Reunion of Medical Officers.—At the second annual reunion of the alumni of the Camp Greenleaf and Fort Riley medical officers' training camps residing in southern California, City Club, Los Angeles, November 10, Col. Edward L. Munson will be the guest of honor. All physicians who served during the World War, and those who have been commissioned in the reserve since the war, are invited to attend this celebration. The secretary of the association is Dr. John C. Copeland, 301 Story Building, Los Angeles.

Physicians Leaving Downtown Districts.—The secretary of the San Diego County Medical Society notes that fully 50 per cent of the physicians holding offices down town have changed their locations, many moving to the new Medico-Dental Building and quite a few into the new John D. Spreckels Building. There is a movement, he says, on the part of small groups to build their own offices in locations removed from the congested districts, about ten groups having recently established themselves in ground floor offices of their own. This exodus from down town is a protest against high rents and difficult parking privileges. The tenants of the new Medico-Dental Building kept open house, September 10, at which time one could stroll about and see how the other fellow was quartered. There were refreshments and games on the fourteenth floor in the rooms of the medical library which, when established, will be one of the most attractive on the coast.

County Society News.—The secretary, Marin County Medical Society, says in *California and Western Medicine* that an interesting question has come up in his community in connection with using high frequency apparatus and the radio. When the former machines and diathermy outfits are in action, radios within several blocks are rendered useless, and the question has arisen as to who has the "right of way." The secretary also states that the members of his society will not take the trouble to attend a meeting unless an outside speaker presents a paper. They have, therefore, found the extension lecture program extremely helpful.——The San Diego County Medical Society was the guest of the commandant of the U. S. Naval Hospital, Balboa Park, September 13; the navy staff presented a clinical program.——Dr. Ludwig A. Emge, Stanford University School of Medicine, addressed the Fresno County Medical Society, Fresno, September 6, on "Cause and Treatment of Sterility in Women."——The Kern County Medical Society held a symposium on infantile paralysis, September 15.——Dr. Lyell C. Kinney, San Diego, addressed the San Diego County Medical Society, October 11, on "Recent Advances in Roentgenology"; Dr. Rieta C. Hough, San Jose, presented a case of acrodynia.

GEORGIA

Personal.—Dr. Eugene B. Elder, formerly superintendent of the Georgia Baptist Hospital, Atlanta, is now general superintendent and business manager of the two municipal hospitals of Lakeland, Fla., and superintendent of the Morrell Memorial Hospital of Lakeland.——Governor Hardman announces the reappointment of members of the state board of medical examiners as follows: Drs. Alfred F. White, Flovilla; Harold F. McDuffie, Atlanta, and Burr T. Wise, Plains; also the reappointment of members of the state board of health as follows: Drs. Millard S. Brown, Fort Valley, and James H. McDuffie, Columbus.

Society News.—The Spalding County Medical Society will be host to the Sixth District Medical Society at Griffin at a meeting, November 30.——Dr. John W. Daniel, Savannah, addressed the Tenth District Medical Society, Augusta, recently, on "Value of Metabolic Chemistry to the Surgeon."——Dr. Cosby Swanson, Atlanta, presented a case of blastomycosis which was one of four in the same family before the Fulton County Medical Society, October 6. Dr. Newdigate M. Owensby, Atlanta, addressed the society on "Etiology and Treatment of Functional Nervous Diseases."——Dr. William C. Warren, Jr., won the championship flight in the physicians' annual golf tournament of the Fulton County Medical Society, Atlanta, September 22. The merchants of the city generously donated prizes and trophies for the tournament.——Dr. Madison Hines Roberts read a paper before the Fulton County Medical Society, Atlanta, October 20, on "Relation of Pigment Content in Serum and the Spinal Fluid of the New-Born."

CHICAGO

Registered Nurses Make Physical Examinations.—The Chicago Tuberculosis Institute announces that it has made a health survey of one of Chicago's junior high schools where at least 95 per cent of the pupils are negroes. Every student, it is stated, was given a physical examination by a trained and registered nurse from the staff of the institute. The survey was completed in twenty-six days. Among other things, a nurse in each case examined the throat for hypertrophied tonsils; the glands of the neck; the teeth, and the eyes, and made a record of skin eruptions and orthopedic defects, and of the height and weight. Nine hundred girls and 542 boys were examined. Among the observations recorded were enlarged thyroid in 180 pupils; enlarged cervical glands in 229; skin eruptions in sixty-five; heart defects in eighteen; vision defects in 136; tonsil defects in 325, and teeth defects in 444. Follow-up work was undertaken by the nurses, who made more than 1,000 calls.

Personal.—Dr. Fred C. Zapffe has been put in charge of all clinical clerks of Northwestern University Medical School. The *Bulletin of the Association of American Medical Colleges* notes that this is the first appointment of its kind in any medical school.——Dr. Mary G. Schroeder has been appointed medical director of the Marquette Sanitarium, 3741 Sixty-Sixth Place.——Among others, Dr. Arthur D. Black, dean and professor of dental pathology and of operative dentistry, Northwestern University Dental School, and Dr. Morris Fishbein, editor of The Journal, addressed the annual meeting of the American Dental Association, Detroit, October 24-28.——Dr. Elmer E. Henderson addressed the Physicians' Fellowship Club, 2451 Kedzie Boulevard, October 21, on "Hospitals of Europe."——Dr. Julius H. Hess opened the third season of medicohistorical lectures at the University of Illinois College of Medicine, October 19, with an illustrated talk on his recent visit to pediatric clinics in Norway, Sweden, Denmark and Holland.

Formal Opening of University Clinics and Laboratories.—The formal opening of the University of Chicago clinics and new medical laboratories on the Midway will take place, October 31 and November 1. At the convocation in Leon Mandel Assembly Hall, the president of Yale University, James Rowland Angell, LL.D., will give the address on "Medicine and the University"; then there will be a luncheon for the delegates at the Albert Merritt Billings Hospital. Monday afternoon, October 31; there will be departmental assemblies, William Mansfield Clark, Ph.D., Johns Hopkins University School of Medicine, Baltimore, addressing the departments of physiology, physiologic chemistry and pharmacology, on "Reduction of Dyes by Biologic Systems and Some Remarks on the Mechanism"; Dr. Robert Gesell, University of Michigan, on "Regulation of Respiration," and Dr. Arthur S. Loevenhart, University of Wisconsin Medical School, on "Studies in Drug Tolerance with Special Reference to the Esters of Nitrous and Nitric Acids." The assembly in the departments of pathology, hygiene and bacteriology will be addressed by Dr. Karl Landsteiner, Rockefeller Institute for Medical Research, New York, on "Recent Investigations on Antigens." At the department of medicine assembly, the Frank Billings Medical Clinic will be dedicated, the presentation of the clinic and the endowment fund being made by the chairman of the citizens committee, Bernard E. Sunny. President Mason of the University of Chicago will give the response; Dr. Alfred E. Cohn, Rockefeller Institute for Medical Research, will speak on "Medicine and Science," and Donald D. Van Slyke, Sc.D., Rockefeller Institute for Medical Research, on "Urea Excretion in Nephritis." On the sixth floor in the surgical clinic, Dr. Arthur Dean Bevan will give clinical demonstrations. In the evening, Prof. I. Snapper, University of Amsterdam, will speak in Leon Mandel Assembly Hall on "Nonexcretory Function of the Kidney" and Dr. Francis Carter Wood, director of cancer research, Columbia University, New York, on "Present Status of Cancer Research." Tuesday morning, the Albert Merritt Billings Hospital and the Max Epstein Clinic will be dedicated, Dr. Frank Billings, Chicago, making the presentation for the Billings family, and Max Epstein for the Epstein family. Rufus Cole, director, Hospital of the Rockefeller Institute for Medical Research, will give an address on "The

Hospital and the Laboratory." Tuesday afternoon in the assembly room of the university clinics, Dr. William S. Thayer, professor emeritus of medicine, Johns Hopkins University School of Medicine, and President Elect of the American Medical Association, will give a clinical lecture on "Bacterial Endocarditis," and Dr. Evarts A. Graham, Washington University School of Medicine, St. Louis, on "Diseases of the Gallbladder." The dedication of the hospital and clinics marks the opening of a program of expansion in medicine at the university which will extend over a number of years and include the construction of several additional hospitals.

KANSAS

Society News.—The quarterly meeting of the Golden Belt Medical Society was held at Salina, October 6. Dr. Ralph E. Cheney, Salina, read a paper on "Pupillary Reaction in Systemic Disease"; Dr. Richard L. Sutton, Kansas City, Mo., "Diagnosis and Treatment of Cancer of the Skin," and Dr. Edwin H. Schorer, Kansas City, Mo., "Appendicitis in Early Childhood"; Dr. Sutton gave a lantern slide illustration and talk on the subject of tigers.——Dr. William C. Menninger, among others, addressed the Shawnee County Medical Society, Topeka, September 6, on "St. Elizabeth's Hospital, Washington, D. C.," and Dr. Arthur D. Gray on "Nonspecific Genito-Urinary Infections in the Male."——Among others, Dr. Samuel S. Glasscock, Norton, read a paper on "Care of the Borderline Mental Cases" before the Decatur-Norton County Medical Society, Colby, October 7.——Dr. Harry W. King, Kansas City, addressed the Wyandotte County Medical Society, October 4, on "Acute Appendicitis."——The ladies had prepared a fine dinner for the members of the Harvey County Medical Society, September 5, at Whitewater, but a severe storm prevented their assembling there, and the meeting was held at the Axtell Christian Hospital, Newton, instead, where Dr. Alfred O'Donnell, Ellsworth, read a paper on "Cleft Palate."

LOUISIANA

Personal.—Dr. Idys M. Gage has been appointed full-time assistant professor of surgery at Tulane University of Louisiana School of Medicine, New Orleans.——At the annual meeting of the staff of the Charity Hospital, New Orleans, Dr. Jerome E. Landry was elected president of the staff, and Dr. Rudolph Matas a member of the consulting staff.

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce from sixty-seven cities with a total population of about 30 million, for the week ending October 15, indicate that the highest mortality rate (18.1) was for New Orleans, and that the mortality rate for the group of cities as a whole was 11.0. The mortality rate for New Orleans for the corresponding week last year was 16.7, and for the group of cities, 11.6.

MARYLAND

Study of Causes of Deafness.—Larger quarters at Johns Hopkins University School of Medicine, Baltimore, have been devoted to a study of causes of deafness; eventually, it is planned to have the new enterprise reach the proportions of an independent clinic, and to extend the work to the whole field of maladies of the ear. The director of this work is Dr. Samuel J. Crowe, clinical professor of laryngology and otology; Stacy R. Guild, Ph.D., is in charge of the laboratory. The Rockefeller General Education Board, members of the Dupont family and others have given financial aid.

Personal.—Dr. Hubert A. Royster, Raleigh, N. C., suffered an acute attack of appendicitis on the train while en route to Detroit, September 29, and is now a patient in the Union Memorial Hospital, Baltimore.——Drs. James E. Peterman and Oliver S. Lloyd have been appointed surgeons to the Baltimore City Fire Department.——Dr. Dean Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, has been appointed a member of the medical council of the U. S. Veterans' Bureau.——Friends of Dr. Randolph Winslow gave an old-fashioned surprise party, October 22, on the occasion of Dr. Winslow's seventy-fifth birthday, meeting at a designated place and going in a body to his home.

Health Conference on Wheels.—The Maryland Department of Health notes that more than 1,600 preschool children were examined during the summer in connection with the tour of the healthmobile of the bureau of child hygiene which was in the field from June until the end of September, holding ninety-six conferences. The tour covered about 1,000 miles through counties along the western and eastern shores. More than half of the children examined, the department states, were in need of follow-up care of some sort. Vaccination against smallpox had been neglected in nearly two thirds of the children over 4 years of age. Each conference was in charge of a physician assisted by a public health nurse and reports of the results of each examination were sent to the family physician.

MISSOURI

Increase in Death Rate.—The 1926 death rate for Missouri was 12.22 per thousand of population, as compared with 11.85 in 1925. The increase is accounted for largely, the U. S. Department of Commerce states, by increases in death rates from diseases of the heart, measles, pneumonia, cancer and whooping cough.

Society News.—Through the courtesy of the St. Louis Roentgen Club, motion pictures of stomach ulcers were shown at the September 27 meeting of the St. Louis Medical Society. Dr. Ralph L. Thompson discussed "Pathology of Gastroduodenal Ulcers," and Dr. Joseph W. Larimore, "Physiology of the Stomach."——At the meeting of the Kansas City Academy of Medicine, October 7, Dr. Peter T. Bohan spoke on "Heart Clinics," and Dr. Otto Jason Dixon on "Brain Abscess as an Ear Complication with Postoperative Specimens and Patients."——Dr. Gilbert C. McCormick addressed the Jackson County Medical Society, Kansas City, September 27, on "Fractures of the Wrist Joint; Radiology and Treatment," and Dr. Sam E. Roberts, Kansas City, on "Some Experiences in Bronchoscopy and Esophagoscopy." The October 4 meeting was addressed by Dr. Alexius M. Forster, Colorado Springs, on "Pulmonary Tuberculosis."——Among others, Dr. Evan S. Connell, Kansas City, addressed the Lafayette County Medical Society, Odessa, August 9, on "Nose and Throat Conditions."——Dr. Francis M. Barnes, Jr., St. Louis, addressed the Marion County Medical Society, October 7, Hannibal, on "Early Neuropsychiatric Diagnosis."

Tornado Wrecks Hospital and Physicians' Offices.—According to the secretary of the Missouri State Medical Association, Dr. Edward J. Goodwin, St. Louis, several hospitals and physicians' offices were damaged, September 29, by the tornado which swept through the residential section of St. Louis just west of Grand Avenue and within five minutes destroyed $20,000,000 in property and killed seventy-one persons. The Mullanphy Hospital was completely wrecked and was abandoned, the sixty-three patients being distributed among other hospitals; the Deaconess Hospital was damaged to the extent of $65,000, and the Shriners' Hospital for Crippled Children, to the extent of $25,000. None of the patients in these hospitals were injured. The tornado passed with such suddenness that persons outside of its path were unaware of any serious damage for several hours. The numerous calls for ambulances quickly brought the situation before the St. Louis Medical Society, whose president, Dr. Charles A. Vosburgh, was almost immediately able to furnish a relief force from among the members. They, with the Red Cross, administered free tetanus antitoxin to injured persons, and to date (October 20) no cases of tetanus have developed. The Beaumont Medical Building, the Humboldt Building, the University Club and the Metropolitan Building were all without light and power for several days. On Olive Street, near Sarah Street, a building containing offices of physicians was wrecked and the physicians' equipment ruined, but no lives were lost. Among those whose offices were destroyed or damaged were Drs. Freeman L. Finley, Edwin C. Funsch, William J. Gallagher, Moses E. Haase, Alonzo G. Hobbs, Albert H. Horn, Marshall Dwight Jennings, Wilbur F. McConkey, Albert H. Myerdick and W. H. White.

NEBRASKA

Loup City's "Public Health Service."—Certain persons in Loup City appear to be using a name not unlike that of the U. S. Public Health Service in connection with commercial enterprises being conducted by them. Briefly, the plan appears to comprise a canvass of the homes in selected communities, the agents explaining to the housewives that the "Public Health Service" is putting on a campaign to instruct the people in oral hygiene and preventive dentistry. The canvasser explains that the "Public Health Service" is doing wonderful work along dental lines to benefit the people in different parts of the country, and is spending time and money every year to impress on the public the importance of the serious effects of diseased teeth on general health. Having thus explained the purpose of the "Public Health Service," the agent presents a series of questions on a printed card for the housewife to answer, concerning, apparently, the number of teeth in the family that may need attention. The next step is to state that it costs only $1 per member to join "the clinic," which will entitle one to have the teeth cleaned twice a year and examined as frequently as necessary. Actual dental work found necessary, however, is to be done "at the minimum cost." When sufficient members for a clinic are obtained, the "Public Health Service" appoints a dentist in the community to take charge of the "clinic." The Better Business Bureau of New York City obtained copies of the instruction given by the "Public Health Service" for certain dentists to thus enlarge their practice and considered it sufficiently important to notify the United States Public Health Service, which, of course, knew nothing about Loup City's "Public Health Service."

NEW YORK

Personal.—Dr. Lester M. Coulter has been relieved as city health officer of Watertown, it is reported, by the civil service board because he is not registered to practice in the state of New York, and the Jefferson County Medical Society was requested to recommend a temporary successor to Dr. Coulter.

Society Studies Journal in Graduate Course.—The Clinton County Medical Society secured Dr. Harris A. Houghton New York, to give a postgraduate course of six sessions on cardionephritis, beginning October 24, each session to be a lecture and clinical demonstration combined. The hospitals and physicians of Plattsburgh cooperated in securing material for the laboratory work and in the keeping of the records. One session was devoted to the metabolic preparation of patients for operation. Dr. Houghton discussed briefly at the close of each session articles on metabolism that appeared in the last issue of THE JOURNAL, and he requested that each member taking the course bring THE JOURNAL with him.

Conference of County Secretaries.—The secretaries of the county medical societies of New York held their annual conference, September 15, at Albany. The secretary of the state society, Dr. Daniel S. Dougherty, New York, presided. Representatives were present from thirty-eight counties. Dr. James E. Sadlier, Poughkeepsie, president of the state society, who has filled every office in his own county medical society, said that the office of secretary was the most important. The president elect of the state society, Dr. Harry R. Trick, Buffalo, stated that the scope of county societies is increasing at a rapid rate. Dr. William W. Britt, Tonawanda, outlined the work of the committee on economics; Dr. Joseph S. Lawrence, Albany, executive officer of the state society, outlined the plans of the committee on public relations; Dr. Thomas P. Farmer, Syracuse, of the committee on public health and medical education, said the most acute civic problem before physicians is that concerning the establishment of county health departments; Dr. Frank Overton, Patchogue,

executive editor of the state medical journal, read a paper on "Publicity and County Medical Societies"; Dr. Henry L. K. Shaw, Albany, of the committee on legislation, urged the county societies to respond promptly to calls when the legislature opens; Dr. Orrin S. Wightman, New York, editor of the state journal, stated that the journal makes a great effort to secure constructive news which will inspire county societies to activity. The activities of various individual county societies were described by their presidents and secretaries. This was the second formal annual conference, although the secretaries had frequently met in an informal way heretofore during the meeting of the state society.

New York City

Forty-Four Cardiac Clinics for Poor Patients.—Two new cardiac clinics for children have just been approved by the committee on cardiac clinics of the New York Tuberculosis and Health Association, one at the Beekman Street Hospital and one at St. Mark's Hospital. The committee's membership now totals forty-four cardiac clinics, which are operated to serve persons with heart disease who cannot afford to pay a private physician's fee. However, the announcement states, there is a small charge at the St. Mark's Clinic and the Beekman Street Hospital Clinic for those who can afford to pay.

Diseases Under Investigation at Rockefeller Institute.—The Hospital of the Rockefeller Institute for Medical Research announces the diseases that are being studied during the year 1927-1928. Patients suffering from them will be admitted to the hospital to the extent of its facilities without charge. Physicians may refer suitable patients to the hospital. The diseases are (1) acute infections of the respiratory tract, including lobar pneumonia; (2) measles and chickenpox; (3) nephritis, especially in young persons; (4) rheumatic fever, early in the course of the disease; (5) cardiac disease, especially in old persons in the more advanced stages of heart failure. Information concerning the particular type of the disease desired for study can be obtained by telephoning the hospital (Rhinelander 0900) or by personal application to the resident physician. An ambulance will be sent promptly when requested, and there will be no charge for any service.

Hospital News.—Dr. Harold M. Hays announces the immediate erection of a hospital building at 112-114 East Eighty-Third Street, to be known as the Park East Medical Building. About a year ago, Dr. Hays opened the Park West Medical Building at 168-170 West Seventy-Sixth Street.——The medical staff of the Unity Hospital, Brooklyn, gave a welcome home to Dr. George I. Miller, chief surgeon of the hospital, and Drs. William Lintz, Maurice B. Pearlstein, Moses M. Apfel and Isaac P. Starr, who have been abroad several months. There was a reception, dinner and dance. Dr. Russell Burton-Opitz was toastmaster; the speakers were Drs. Charles F. Fisher and Jacob Gutman.——A group of Italian-speaking physicians is building a sanatorium at 123 West One Hundred and Tenth Street to be known as the Parkway Hospital, which will be open to the medical profession in general.——The surgical staff of the Fifth Avenue Hospital has been reorganized with Dr. Fred W. Bancroft, surgical director; the so-called ward service of the surgical department will comprise about seventy beds, and each patient will be treated in a private room, the rates corresponding to those of other metropolitan hospitals.——A new home for the city department of health to cost about $2,000,000 is under consideration, and the board of estimate voted, October 10, that a site on Center Street opposite the new supreme court building, between Worth and Leonard streets, be selected.

Personal.—Dr. LeRoy A. Wilkes, who for the last year was at the University of Texas organizing the student health service, has returned to the American Child Health Association, 370 Seventh Avenue, as director of the medical service division.——Dr. Sigismund S. Goldwater, director, Mount Sinai Hospital, New York, visited England this month in order to give the voluntary hospitals of London and England the benefit of the experience of the United States in the construction and maintenance of pay or private beds.——Dr. Rufus I. Cole, director, Hospital for Infectious Diseases of the Rockefeller Institute, gave the first DeLamar lecture in hygiene before the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, October 18, on "Acute Pulmonary Infections."——Dr. John B. Walker, professor of clinical surgery, Columbia University College of Physicians and Surgeons, has been appointed a member of the medical council of the U. S. Veterans' Bureau.——Dr. Dougal Bissell has retired from the staff of the Woman's Hospital on account of the age limit, and has been made consulting surgeon; Dr. Byron H. Goff and Dr. Lilian K. P. Farrar have been appointed attending surgeons on the staff of the hospital.——The dean of Cornell University Medical College announces the appointment to the faculty of Harry J. Deuel, Jr., Ph.D., and Dr. McKeen Cattell as assistant professors of physiology; Dr. Byron P. Stookey as assistant professor of clinical surgery, and Morton C. Kahn, Ph.D., as associate in public health and preventive medicine.——The New York Physicians' Golfing Association held its last tournament of the season, October 5, with Dr. Anthony Bassler acting as host, and Drs. Frank C. Carr and Lawrence D. Alexander, Jr., winning the low gross and low net scores, respectively.——Dr. George E. Brewer has gone to France to remain for at least a year.——Dr. Edwin Beer received the first award of the gold medal of the International Urological Congress at the meeting in Brussels, August 2, for the introduction, according to the *New York Medical Week*, of a method of treating bladder tumors by high frequency currents.——Dr. Anna R. M. Richardson assumed her new position as physician to Smith College, Northampton, Mass., at the recent opening of the college year.

Another Unit in Medical Center Started.—An institution founded eighteen years ago partly for research and education in the neurologic field is to have new quarters in the medical center under construction at One Hundred and Sixty-Eighth Street and Fort Washington Avenue. Ground was broken, October 19, for the fourteen story building of the Neurological Institute of New York which will be an ally of the New York State Psychiatric Institute in the struggle against nervous and mental diseases. Both will be units of the medical center. The former will cost $1,750,000. It will have 130 ward beds and eighty-five private rooms, thus doubling the facilities of the institution. One floor and roof garden will be devoted to a department of occupational therapy, and one operating suite will be especially designed for neurosurgery. There will be two solariums on each ward floor and private patient floor. The educational work of the institute will be continued in the psychologic laboratory, the classification clinic, the mental health clinic and the court clinic. The departments of neurosurgery will conduct research on epidemic encephalitis, for which purpose Mr. J. P. Morgan has given $200,000 to establish a ward floor in memory of his wife, who died of this disease, and Mr. William J. Matheson has given $250,000 to found the first survey on epidemic encephalitis, the work of which will be carried on in the Morgan ward. Plans are being made also to house sixty-seven nurses and the interns and administrative personnel. The president of the institute, Robert Thorne, presided at the ceremony and introduced the speakers: Dr. Frederick W. Parsons, Albany, state commissioner of mental hygiene; Dr. Frederick Tilney, professor of neurology and neuro-anatomy, Columbia University College of Physicians and Surgeons; Gen. William B. Parsons, chairman of the Joint Administrative Board of the Medical Center, and Felix Warburg and Miss Mabel Choate, vice presidents of the institute.

PENNSYLVANIA

Society News.—Dr. James F. Carrell, Philadelphia, addressed the Bucks County Medical Society, Hatboro, October 12, on "Significance of Hypertension in Pregnancy."——Warrants were issued, August 15, for the arrest of twenty physicians of western Pennsylvania on charges of selling prescriptions for liquor and beverage purposes. The physicians named, it is reported, are residents of Erie, New Castle, Johnstown, Brownsville, Franklin, Monessen and Uniontown.——Dr. Theodore Diller reviewed the annual meeting of the

British Medical Association in Edinburgh, October 25, before the Pittsburgh Academy of Medicine.——The Medical Society of the State of Pennsylvania, at its annual meeting in Pittsburgh, approved the proposed $50,000,000 bond issue of the state for a ten year building program for state owned institutions for the feebleminded, epileptic and insane, which will be submitted to the voters next year.

Personal.—Dr. William H. Kohler, Milroy, has been appointed medical inspector for Mifflin County to succeed Dr. Charles J. Stambaugh, Reedsville.——The low gross score in the first golf tournament of the Pennsylvania State Medical Golf Association, during the annual meeting of the state medical society at Pittsburgh, was made by Dr. George J. McKee; he will keep the cup offered by the Allegheny County Medical Society for one year until the following tournament is played. Dr. John Welsh Croskey, Philadelphia, was elected president of the Pennsylvania State Medical Golf Association. ——Dr. Thayer C. Lyon, Central City, has been appointed medical inspector for Somerset County to succeed Dr. Franklin E. Sass, Boswell.——Dr. Jacob D. Hershey, Manheim, has been appointed by the governor as coroner of Lancaster County to succeed the late Dr. George C. Kinard.

Philadelphia

Society News.—A symposium on vaccine therapy was presented by the Philadelphia County Medical Society, October 26; the speakers were Drs. John A. Kolmer, George B. Wood, Myer Solis-Cohen, Jay F. Schamberg and Benjamin A. Thomas.——The Northern Medical Association of Philadelphia gave a gastro-intestinal symposium, October 17; the speakers were Drs. Samuel L. Immerman, Moses Behrend and Martin E. Rehfuss.——Dr. Aldrich R. Burton addressed the Philadelphia Academy of Medicine and Allied Sciences, October 17, on "Hypertension in the Presence of the Positive Wassermann."——Among others, Dr. Theodore Melnick addressed the West End Medical Society, October 19, on "Some Illuminating Facts Concerning Diphtheria."——Dr. Lewis Gregory Cole addressed the section on medical history of the College of Physicians of Philadelphia, October 27, on "Classification of Gastric Ulcers."——Dr. Carolina S. Ruth Engelhardt has given $5,000 to endow a lectureship at the Woman's Medical College of Pennsylvania.

SOUTH DAKOTA

Society News.—The fall meeting of the Aberdeen District Medical Society was held at Mobridge, September 27; among others, Dr. Benjamin H. Hager, Rochester, Minn., spoke on "Pyelography in the Diagnosis of Renal Pathology," and Dr. Julius O. Arnson, Bismarck, N. D., "Use of Iodine in Goiter."——The Huron District Medical Society met at Miller, October 7, and after a pheasant dinner (the pheasant hunting season opened, October 7) was addressed by Dr. Joseph C. Ohlmacher, professor of pathology, University of South Dakota School of Medicine, on "The Kahn Test for Syphilis." Other speakers were Drs. George R. Albertson, acting dean of the medical school; Silas M. Hohf, Yankton, and John F. D. Cook, Langford.——The Whetstone Valley District Medical Society met at Milbank, October 11; there was a pheasant dinner at the home of Dr. and Mrs. Charles Flett, and a heart clinic by Dr. Donald McCarthy, Minneapolis. The cases for the clinic were furnished by local physicians.——At the fall meeting of the Yankton District Medical Society, Dr. Leon F. Beall, Irene, read a paper on the treatment of asthma by ultraviolet light.

TENNESSEE

Census of Physicians Under Way.—The trustees of the Tennessee Medical Association approved the expenditure of money for taking a census of physicians in Tennessee. The state medical journal expects to be able to publish in its December issue a complete list of the physicians registered in Tennessee, with information regarding their licensure, medical education and membership in the state society, and their distribution. The cooperation of every one concerned in this work is requested. The state association has a larger membership now than at any time since 1920, but the limit, the state journal notes, has by no means been reached. Members are urged to assist in getting eligible nonmembers into the county and state organizations.

Waiting List at Meharry College.—Meharry Medical College, Nashville, opened its fifty-second annual session, October 9, with more than 400 students enrolled in the various departments. The medical school was filled to capacity, and a waiting list of applicants for entrance for next year has been prepared. The president, Dr. John J. Mullowney, addressed the students on "Relation of the Freshmen to Meharry Medical College of the Past, Present and Future." He is reported to have said that five new teachers have been added to the faculty and several thousands of dollars worth of new laboratory equipment provided this year. He made reference to the recent recognition of graduates of Meharry Medical College by the state of New York. About 95 per cent of the students at Meharry are at the same time earning money to pay their way through school.

UTAH

New Appointments at Medical School.—Dr. Orin A. Ogilvie, a graduate of the University of Pennsylvania School of Medicine, Philadelphia, has been appointed assistant professor of anatomy and pathology in the University of Utah School of Medicine, and Leon H. Strong, Ph.D. (California), assistant professor of anatomy, University of Indiana School of Medicine, has been appointed associate professor of anatomy.

WISCONSIN

Hospital News.—Dr. Henry C. Werner has been appointed superintendent of the Wisconsin Memorial Hospital, Madison, effective, October 1, succeeding Dr. Clesson C. Atherton. ——An eighty-one bed infirmary is under construction at the Wisconsin State Sanatorium, Statesan.

Annual Cruise on River.—For the third time, Dr. William J. Mayo recently extended the use of his yacht for the annual cruise of the Trempealeau-Jackson-Buffalo County Medical Society on the Mississippi River, Dr. and Mrs. Leonard G. Rowntree of the Mayo Clinic representing the host on this occasion. The president of the state medical society at that time, Dr. Arthur W. Rogers, and his wife, were the guests of honor. Dr. Rogers addressed the society on "Periodic Health Examinations" and on "The Nursing Problem." Dr. Rowntree gave an address on "Kidney and Liver Functions." The yacht cruised along the Winnesheik district, which is a federal game preserve. There were about fifty in the party, and two basket lunches were served. During part of the program there was a severe rain storm, but the party was not disturbed.

GENERAL

Infantile Paralysis Outbreak Largest in Three Years.—From July 3 to October 1, there had been reported to the U. S. Public Health Service 4,570 cases of infantile paralysis, as compared with 3,537 cases for the similar period in 1925, and with 1,228 cases for the same period in 1926. These reports may be incomplete in some instances, but about the same number of states were included in the comparisons. A table published by the Public Health Service for the year up to October 1 shows that most cases occurred in California, Illinois, Massachusetts, New Jersey, New York, Ohio and Texas. The states mentioned are not in consecutive order with reference to the number of cases. During the week ending October 15, 579 new cases were reported throughout the country. This was a decrease of seventy-one cases over the number reported during the previous week. Washington and Pennsylvania were said to have been the only two states reporting increases.

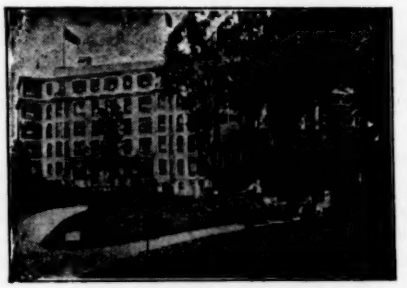
Dr. Howard Resigns as Chief of Bureau of Entomology.—Dr. Leland O. Howard retired, October 17, as chief of the bureau of entomology, U. S. Department of Agriculture, Washington, D. C., in his fiftieth year of government service. Although relieved from administrative duties, he will still devote his energies to entomologic research, particularly in the fields of medical entomology and parasitology. Dr. Howard has been a leader in the crusade against the mosquito and the house fly. He was secretary of the American Association for the Advancement of Science for twenty-two years, and the president in 1920. He has been a delegate to many international assemblies; he is an honorary member of many foreign scientific societies, and has received decorations abroad. The bibliography of his publications includes 941 titles. The successor of Dr. Howard as chief of the bureau will be C. L. Marlatt, D.Sc., who has been a member of the department for many years, and who for five years was associate chief in charge of the regulatory work of the bureau of entomology. His specialties have been studies of scale insects, saw flies and locusts.

American Education Week.—At the Toronto meeting, the World Federation of Education Associations recommended the observance of Education Week throughout the nations of the world, November 7-13. The National Education Association, cooperating with the American Legion, has made suggestions for the observance of Education Week in the United States. It is recommended that the medical organizations lend assistance. The purpose of Education Week is to acquaint the public with the actual work of the schools, and their achievements, needs and ideals. Monday of Education Week is to be Health Day. Citizens should be encouraged to visit classes and observe through drills, athletics, posters, health films, parades and short talks what is being done to promote health in the schools. Tuesday of Education Week is to be Home and School Day, the central thought being that the home is the most fundamental institution among civilized people; Wednesday is to be Know Your School Day; Thursday, School Opportunity Day; Friday, Armistice and Citizenship Day; Saturday, Community Day, and Sunday, For God and Country Day. For detailed programs or suggestions as to how to plan for the various days, information will be given by the National Education Association, Washington, D. C.

New Society Officers.—At the meeting of the American Roentgen Ray Society, Montreal, September 20-23, Dr. Edward H. Skinner, Kansas City, Mo., was made president elect; Drs. Ralph D. Leonard, Boston, and Lawrence Reynolds, Detroit, vice presidents; Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, secretary, and Dr. William A. Evans, Detroit, treasurer.——Dr. Joseph C. Doane, Philadelphia, was installed as president of the American Hospital Association at the recent annual meeting in Minneapolis; Dr. Louis H. Burlingham, St. Louis, was made president elect; Dr. Frederick C. Bell, Vancouver, B. C., third vice president, and Mr. Asa S. Bacon, Chicago, superintendent of the Presbyterian Hospital, treasurer.——The next meeting of the American Proctologic Society will be at Rochester, Minn., June 9, and at Minneapolis, June 11-12, 1928.——At the annual meeting of the American College of Surgeons, Detroit, October 7, Dr. Franklin H. Martin, Chicago, was elected president elect, and Drs. John Chalmers DaCosta, Philadelphia, and Herbert P. H. Galloway, Winnipeg, vice presidents.——Dr. Lewellys F. Barker, professor emeritus of medicine, Johns Hopkins University School of Medicine, Baltimore, was installed as president of the Interstate Postgraduate Medical Association of North America at the recent annual convention in Kansas City.——At the recent annual meeting of the American Public Health Association, Cincinnati, Dr. Herman N. Bundesen, commissioner of health of Chicago, was elected president; George W. Fuller, consultant sanitary engineer, New York City, Dr. William H. Peters, health commissioner, Cincinnati, and Dr. James R. Roberts, health officer, Hamilton, Ontario, vice presidents; Louis I. Dublin, Ph.D., statistician, Metropolitan Life Insurance Company, New York City, treasurer, reelected, and Homer N. Calver, executive secretary, reelected.

Preliminary Conference on International Hospital Congress.—At the invitation of the American Hospital Association, representatives from eleven countries met at Paris, September 19, to consider the proposal of conducting an international hospital congress in 1929. Those in attendance from the United States were Dr. Taliaferro Clark, U. S. Public Health Service, Washington, D. C.; Dr. Joseph C. Doane, Philadelphia, president of the American Hospital Association, and E. H. Lewinski-Corwin, Ph.D., of the United Hospital Fund, New York. Among the delegates were the secretary of the British Hospital Association; the chairman of the Federation of French Hospital Unions; the councillor of the League of Red Cross Societies, Rome; the envoy extraordinary and minister of Mexico in Paris; the secretary of the International Council of Nurses, Geneva, and representatives of the League of Red Cross Societies, Paris. A morning and an afternoon session was held, at the conclusion of which it was resolved that an international executive committee should be appointed for the general preparation of an international hospital congress to be held in the United States in June, 1929. The committee will consist of two delegates from each participating country with Lewinski-Corwin, New York, as general secretary, who shall call the first meeting in March, 1928, at the League of Red Cross Societies, Paris. The principal problems to be discussed at the first international congress will be limited to (1) creation of national hospital associations and of an international hospital association; (2) the respective fields of public and private hospital work; (3) the hospital as a center for the cure and prevention of disease, medical education and research; (4) the training of hospital executives, nurses and auxiliary personnel, and (5) the economic problems of hospital administration. No votes will be taken on technical matters discussed. An international exhibition will be conducted in connection with the congress.

History of American Hospital of Paris.—A few Americans in Paris determined, in 1904, to build a hospital for the care of their countrymen who became ill while abroad. It was thought that accommodations for ten patients would be adequate, but when the hospital opened in 1910, the capacity was increased to twenty beds. A year later, the capacity was increased to thirty-two beds, and even this was found too small. For some years, the patients were crowded into extra beds in rooms or in the corridors, as many as fifty being cared for at times. Now the American Hospital of Paris has a new 120 bed fireproof building, views of which are shown here. It cost about $1,000,000, most of which was contributed in public campaigns conducted by Americans living in Paris. There are two memorial beds, twenty-four dedicated beds, and seventeen dedicated rooms. The new building is a memorial to the memory of American men and women who served in the World War. When the World War started, the directors of the American Hospital of Paris organized the American Ambulance, which, when this country entered the war, was turned over to the U. S. Army as American Military Hospital number 1. Some of America's most distinguished physicians and many nurses served with this organization, which was maintained largely by voluntary contributions from America. At the battle of the Marne, the American Ambulance created for the emergency a motor ambulance service out of which grew the American Field Service, an independent organization in which many young men from the United States served as volunteers. The hospital is said to be exclusively for the care of Americans who are traveling in Europe. It is managed by a board of twenty American citizens, of which Ambassador Myron T. Herrick is honorary president. The medical work is directed by a board on which are a number of American physicians. There is a medical advisory board of more than thirty physicians, the chairman of which is Dr. Clarence C. Burlingame, 17 East Forty-Second Street, New York, and a consulting staff of Paris physicians. The nurses' training school is in charge of American nurses. There are arrangements whereby young physicians go to Paris to serve as interns at the hospital. The general manager is G. A. Trube, and the chairman of the medical board, Dr. Edmund L. Gros. The address is the American Hospital of Paris, 63 Boulevard Victor Hugo, Neuilly-sur-Seine, Paris, France.



View from the garden.

Main entrance.

LATIN AMERICA

University News.—The second session of the School of Tropical Medicine of the University of Porto Rico under the auspices of Columbia University, New York, opened at San Juan, Porto Rico, October 3. The director, Dr. Robert A. Lambert, gave an address on "Modern Tendencies in Medical Education." Henry J. Doerman, acting chancellor of the University of Porto Rico, spoke on the rôle of the school as a graduate department of the university. Dr. Pedro N. Ortiz, commissioner of health and professor of hygiene and communicable diseases, presided.

Government Services

Navy Personals

William W. Hall and Roger D. Mackey have been found qualified for promotion to the rank of lieutenant commander, U. S. Navy. The following medical officers have been found qualified for promotion to the rank of lieutenant: Herman Seal, Harvey E. Robins, Henry M. Weber, John R. Smith and William E. Pinner. The Surgeon General's Office has recommended the transfer of Commander Barton L. Wright to the navy recruiting station, Philadelphia, of Commander Griffith E. Thomas to the U. S. S. *Utah*, of Captain Frank L. Pleadwell to the Naval Hospital, Boston, and of Lieutenant Commander Leonard H. Denny to the U. S. S. *Dobbin*.

U. S. Public Health Service

Surg. Holcombe McG. Robertson has been relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington.——Surg. Frank M. Faget has been relieved from duty at Ellis Island, N. Y., and assigned to U. S. Quarantine Station, Mobile, Ala.——Surg. Clarence H. Waring has been relieved from duty at Mobile, Ala., and directed to proceed to Washington, D. C.——Surg. Clifford R. Eskey has been directed to proceed from Manila, P. I., to Calcutta, India, and return to attend the Seventh Congress of the Far Eastern Association of Tropical Medicine, to be held December 5-22. ——Asst. Surg. Felix R. Brunot has been relieved from duty at Manila, P. I., and assigned to duty at Hongkong, China. ——Asst. Surg. F. C. Stewart has been relieved from duty at Hongkong, China, and assigned to duty at Manila, P. I.

New Directory of Reserve Officers

By direction of the Secretary of War, the Surgeon General of the army has had published a directory of the personnel of the medical department reserve under the name of Army Medical Bulletin Number 21. The publication shows the assignment of the medical department reserves to the organizations by divisions, and then gives an alphabetical list of the names of the reserves by states and a straight alphabetical list of the names of all the reserve officers with their rank, local address and assignment.

Changes in Medical Personnel

The October *U. S. Veterans' Bureau Medical Bulletin* notes, among others, the following changes in personnel: Dr. Edward L. Artman, Jr., resigned at Fort Snelling, Minnesota; Dr. George W. Beach, resigned at Walla Walla, Wash.; Dr. Harold W. Brann, transferred from Chicago regional office to Palo Alto, Calif.; Dr. Birnie R. Caldwell, transferred from West Haven, Conn., to central office; Dr. Henry A. Callis, appointed pathologist at Tuskegee, Ala.; Dr. Ware Cooper, resigned at Palo Alto, Calif., as part-time specialist; Dr. Benjamin K. Hays, resigned at Fort Lyon, Colorado; Dr. Matthew C. Hunter, transferred from Columbus regional office to Algiers, La.; Dr. Ogilvie M. Larimore, resigned at Algiers, La.; Dr. Lorenzo F. Luckie, resigned at Muskogee, Okla.; Dr. Robert D. Maddox, transferred from New York City to central office; Dr. Carl W. McGaughey, transferred from central area, Chicago, to central office; Dr. Millard T. Nelsen, appointed as part-time surgical specialist at Tacoma, Wash.; Dr. Fred E. Redman, transferred from central area, Chicago, to central office; Dr. Charles B. Reed, resigned at Castle Point, N. Y., as part-time specialist; Dr. James A. Smart, resigned at Algiers, La.; Dr. Russell D. Stallings, transferred from Algiers, La., to North Little Rock, Ark.; Dr. Toussaint T. Tildon, resigned at Tuskegee, Ala.; Dr. Karl F. E. Wegener, transferred from Sheridan, Wyo., to Portland, Ore. The following changes have recently occurred in regional offices: Dr. Clyde E. Barton, transferred from Burlington, Vt., to central office; Dr. James A. Gould, transferred from Columbus, Ohio, to Sioux Falls, S. D.; Dr. William R. Hardin, transferred from Atlanta, Ga., to Birmingham, Ala.; Dr. James E. Maloney, resigned at New York; Dr. James L. Miller, transferred from Birmingham, Ala., to Des Moines, Iowa; Dr. James M. Morris, resigned at Lexington, Ky.; Dr. William H. Morse, resigned at Portland, Ore.; Dr. Robert W. Porter, resigned at Lexington, Ky.; Dr. Ernest B. Rider, transferred from New York to Hartford, Conn.; Dr. William Schroeder, resigned at Albany, N. Y.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 8, 1927.

A Physiologist's Gospel

At the fortieth annual conference of the Sanitary Inspectors' Association, held at Plymouth, Prof. Leonard Hill, director of the department of applied physiology, National Institute of Medical Research, in his presidential address declared that happiness depended on the conditions and the environment of daily life far more than on wages, and it was by education in matters of health and by improvement in factory and home conditions that most could be done. If mankind turned from wars to the prudent limitation of population, combined with discipline of life and prevention of disease, an increase of general happiness might result through the great discoveries of science. There had been a great advance in the duration of life. The bills of mortality showed that in England, in 1759, half of those over 12 years of age were dead at 47; in 1912, half were dead at 66. Smallpox declined not only because of vaccination but because of the adoption of sanitary habits by vast numbers of the population. Typhoid declined before the discovery of the bacillus and a typhoid vaccine, because of the gradual introduction of clean water supplies. Tuberculosis declined before the discovery of the tubercle bacillus, chiefly because of higher wages affording better nutrition, shorter hours lessening fatigue, and widespread improvement in housing and factory hygiene, and because the stress of the housing situation had been lessened and the risks of overcrowding reduced by removing the sick to hospitals. As Pasteur said, it was within the power of man to rid himself of every parasitic disease. At present, one-seventh of the manufacturing energy of the nation was spent on clothing, and people thought more of adorning the outside than of caring for the health of their bodies. Physicians have hitherto been trained mainly to diagnose and treat illness; they must in the future be trained to prevent disease. While great discoveries were made in the laboratories, the great mass of the human race went on as before. The difficulty was not lack of knowledge, but lack of its application. The whole attitude of both the public and the medical profession wanted changing. At present, the medical profession was paid for looking after sick persons. It ought to be paid for supervision of those not yet ill, and for the prevention of disease by education of the individual in personal hygiene. Bad housing conditions were the great cause of crowding, infections and high mortality. The census of 1921 showed that there were in England and Wales 317,417 private families, consisting of 623,689 persons occupying one room per family, and 617,968 private families, consisting of 2,834,802 persons occupying two rooms per family. Among these, the mortality of young children is very high.

There was little or no evidence that low-necked blouses result in colds and pneumonia. While it was the custom of the Victorian age to fear the cold wind, muffle up the throat and put on overcoats, the lessons learned at the open-air sanatorium are wholly in the opposite direction. The man who has been cured by open-air treatment at a sanatorium rejoices in the wind, and loves to feel it sweep through his clothing and incite him to vigorous exercise. Aviators, Alpine climbers, fishermen, ploughmen, shepherds, bakers going from hot stores to cold streets, physicians going from warm beds to drive in cars to patients, winter bathers, and Russians, who, after a steam bath, roll in the snow, are not subject to catarrhs or rheumatism through exposure to cold. Soldiers at the front exposed in the trenches, and sailors exposed in

the North Sea to the severest winter conditions, were singularly free from catarrhal complaints and pneumonia. They suffered from these when returning home on leave, and while mingling in crowded depots.

Increased Longevity of the Nation

A report on the life tables, based on the population as returned in the 1921 census and on the average number of deaths recorded in the three years from 1920 to 1922, has just been issued by the government actuary, Sir Alfred W. Watson, who states that the probability of a child dying in its first year was decreased by about 40 per cent during the fifteen years from 1906 to 1921. At the ages of adolescence and of young manhood and womanhood, the mortality rates of 1921 did not differ greatly from those of 1911, but between the ages of 30 and 80, the vitality of both sexes increased greatly; at the advanced ages the progress was slight. The expectations of life for the years 1906, 1911 and 1921 show progressive improvement as follows:

Age	1906	1911	1921
MALES			
0	48.53	51.50	55.62
10	51.81	53.08	54.64
20	43.01	44.21	45.78
30	34.76	35.81	37.40
40	26.96	27.74	29.19
50	19.76	20.29	21.36
60	13.49	13.78	14.36
70	8.39	8.53	8.75
80	4.86	4.90	4.93
90	2.56	2.87	2.82
FEMALES			
0	52.38	55.35	59.58
10	54.53	55.91	57.53
20	45.77	47.10	48.73
30	37.36	38.54	40.26
40	29.37	30.30	31.86
50	21.81	22.51	23.69
60	15.01	15.48	16.22
70	9.25	9.58	9.95
80	5.36	5.49	5.56
90	2.94	3.16	3.13

Death of Prof. Adrian Stokes

Prof. Adrian Stokes died at Lagos, at the early age of 41, from yellow fever, contracted while investigating the disease. His death adds one more name to the list of the medical martyrs of science, who, like soldiers on the battlefield, have fallen in the performance of their work, and cuts short a brilliant career. He was a member of an Irish family famous in medicine for a century. His great-grandfather was Dr. Whitley Stokes, well known not only for his contributions to medicine but as one of the founders of the Dublin Zoological Gardens. His grandfather was the famous Dr. William Stokes, a name second only to that of Graves in Irish medicine. His uncle was a well known Dublin surgeon, Sir William Stokes. Prof. Adrian Stokes was educated at Trinity College, Dublin, where he excelled both in sports and in the medical school. He early exhibited a bent for research, and while a student published a remarkable paper on a rare malformation of the heart. He took up bacteriology, and studied for a time in the Rockefeller Institute, New York. On his return home, he soon acquired a reputation for originality and enterprise. On the outbreak of the was in 1914 he joined the army medical corps, in which he displayed extraordinary energy; it was said that he worked twenty-four hours out of the twenty-four. He anticipated the idea of a mobile laboratory by equipping his motorcycle and side-car with an incubator. With this he went forth and succeeded in "capturing" a carrier responsible for an outbreak of typhoid in the Guards' Brigade. He was the first in France to isolate the organism of gas gangrene from the blood stream. Not content with his onerous work as a bacteriologist, he did much, according to some, more than any other man, to improve the conditions of the wounded, the gassed and the sick. One day he found in the Ypres salient that the gassed men were receiving oxygen by means of face masks, which were not very successful. He conceived and carried out the more simple and more efficacious method of administration by the nasal catheter, which became universal. He did much valuable work on trench nephritis, dysentery and wound infections. His most important research, however, was on spirochetal jaundice, which appeared in the salient in 1916. He was the first to recognize that the disease was that described by the Japanese, and traced the infection to rats which ran over the men's food. After the war he was appointed professor of bacteriology at Trinity College, Dublin, and in 1922, professor of pathology at Guy's Hospital, London. The dean, Prof. T. B. Johnston, describes him as "extraordinarily popular with the students; always ready to help any one in difficulty; an impulsive good-hearted Irishman, generous to a fault and absolutely outspoken."

Why the Birth Rate Declines

The continuous decline in the birth rate, which was the lowest on record last year, is attributed by social workers to various causes. The most notable are the lack of housing accommodations; the fact that many landlords refuse to take tenants who have young children; birth control, and the desire of business girls to continue their work after marriage. The head of a professional womens' hostel in London says that more and more of her girl boarders who left to be married seemed to have no thought of undertaking domestic responsibilities. She has heard this discussed in the common room quite openly, and says that it was no unusual thing for a girl to say, "Of course, we are not going to have any children." Some of the boarders with well paid responsible jobs have definitely passed over opportunities for marriage, preferring a career to a husband and children. However, Miss Norah March, an authority of infant welfare, takes a hopeful view. She says, "Educated and intelligent married people are undoubtedly considering how much responsibility in regard to parenthood they are justified in undertaking, and they do not bring into the world children for whom they cannot provide according to their station in life. We are saving more infant life, and so long as the death rate goes down and people live longer lives than they used to do, the national situation is maintained."

Moynihan on the Training of the Surgeon

Sir Berkeley Moynihan, president of the Royal College of Surgeons, in an inaugural address at the opening of the ninety-eighth winter session at King's College Hospital School, said that in recent years few surgeons had found it possible to give adequate time to laboratory research. They had been regarded, and had certainly too narrowly regarded themselves, as mere executants; they were in truth experimental biologists and had in the last two generations carried out valuable researches into the etiology, clinical manifestations and therapy of disease. Were not the physiologists today neglecting opportunities for direct research and too implicitly trusting to analogical research? Why, when investigations into the normal processes of physiologic activity or into aberrations from the normal could be conducted on human beings, were so many opportunities neglected? Why were animals selected for the demonstration of certain physiologic truths when a visit to the wards would enable the teacher to imprint on the minds of his pupils the same truths demonstrated on the human body? Why were so many anatomists content to teach only on the dead body? A change in the training of the surgeon was overdue. It had long been the custom for those waiting to obtain a post on the surgical staff of a hospital to spend years in teaching anatomy and they had been compelled to teach "descriptive anatomy," the bare record of the physical characters of the various structures of the human body—a dull catalogue of dead things. It was true that the surgeon must know this;

but to be constrained to teach successive generations of students the details of descriptive human anatomy, to be compelled to restrict one's teaching to the elementary parts of a finite subject, was insidiously to develop intellectual complacence. Anatomy as an approach to surgery could not long continue to be the descriptive anatomy of recent years, a sterile derivative of true anatomy, which embraced a study of functional activities and purposes. Were his days to come again he should, after leaving examinations behind, spend the time necessary to make an adequate knowledge of human anatomy his permanent possession. He should then escape to experimental research and in a community of like-minded people endeavor to train himself for the high destiny of a surgeon, the one man who might engage in direct research. If surgery were to be something more than a wonderful craft, if it were to be the instrument of research which he believed it to have been and to be destined to be in the future, those who practiced it must have their minds shaped and strengthened by conflict with unsettled problems, not cramped and sterilized by monotonous exercise within a narrow province of static knowledge.

PARIS

(From Our Regular Correspondent)

Oct. 5, 1927.

The Medical Congresses

October is the month of medical congresses. In Paris one or two are held every week. Others are held in the large cities of the provinces. The French Congress of Gynecology opened the series in Lyons. There were three main questions on the program: (1) the diagnosis and the surgical treatment of sterility of uterine and tubal origin; (2) the indications for the interruption of pregnancy, and (3) the separation of the mother and the new-born, and the means of avoiding it.

STERILITY OF UTERINE AND TUBAL ORIGIN

The main paper on the diagnosis and the surgical treatment of sterility of uterine and tubal origin was presented by M. Chatillon of Geneva and M. Douay of Paris. Operations on the tubes had given mediocre results because the organs were chronically inflamed. However, operations performed on healthy subjects yielded a high percentage of good results. The newer methods for the exploration of the tube, such as insufflation of gas, and radiography following intra-uterine injections of iodized oil, show whether or not the lumens of the tubes are obstructed. In this way interventions are performed only in cases susceptible of benefit.

THE INTERRUPTION OF PREGNANCY

Papers were presented on the indications for the interruption of pregnancy by M. Bué of Lille and Brouha of Liége. Therapeutic indications for the interruption of pregnancy are exceedingly rare and are practically confined to tuberculous women. Physicians, however, should preserve the right to interrupt a pregnancy in grave cases of toxemia of pregnancy and repeated hemorrhages during pregnancy.

TAKING THE NEW-BORN AWAY FROM THE MOTHER

In his paper on the question of taking the new-born away from the mother, M. Rhenter of Lyons stated that it is too frequently ordered by physicians who fear that the child may become infected with tuberculosis. It is better, when possible, to employ some other method; more particularly, vaccination of the child by the Calmette method, which has given, thus far, most excellent results.

THE ANNUAL CONGRESS OF SURGERY

The annual Congress of Surgery opened this week in the large amphitheater of the Faculté de médecine. The president of the congress, Professor Bégouin of Bordeaux, discussed in his inaugural address the relations of surgery to the laboratory sciences. While recognizing the importance of the laboratory, he supported the idea that the "clinical sense" and professional experience should be the basis of the final decision. Laboratory documents should be examined with attention but a surgeon should never base his decision on them alone.

An Infectious Disease of the Chimpanzee, Transmissible to Man

A case has recently been observed of the occurrence in man of a disease heretofore confined to the chimpanzee. It is a spirochetosis described anew by Dr. Wilbert, director of the Pasteur Institute at Kindia, in Guinea, West Africa. The disease appears to be related to icterohemorrhagic spirochetosis and to yellow fever. In this instance, the disease was diagnosed in a shipment of fifteen chimpanzees from the Ivory Coast, all of which became ill and nine of which died in transit. Dr. Wilbert made microbiologic researches on the six surviving animals, all but one of which died after being disembarked. The disease is characterized by a subicteric coloration of the conjunctivae; dyspnea, bloody vomit, diarrhea, and a temperature of 105.8. At necropsy, one observes a granulo-adipose degeneration of the liver; congestion and gangrene of the intestine; hypertrophy of the spleen, and signs of grave involvement of the nerve centers. The spirochete that causes the disease is easily cultivated. If the chimpanzee or the guinea-pig is inoculated with the culture, it is readily infected and dies with typical symptoms. Dr. Wilbert, in the course of his researches, became inoculated with the cultures and became gravely infected. He presented symptoms analogous to those of yellow fever. He recovered but only after a long convalescence, which prevented him from continuing his researches.

A Serum Against Mushroom Poisoning

M. Dujarric de la Rivière, professor at the Pasteur Institute, has invented a serotherapeutic treatment for mushroom poisoning. The most dangerous mushroom poisonings, most of which prove fatal, are due to the alkaloid phalline, whereas muscarine is much less deadly in its effects, since it causes prompt and violent vomiting, whereby the larger part of the toxin is eliminated. In the case of phalline, the untoward symptoms do not appear until ten hours after the ingestion of the poison, at which time it has attacked the blood and produced hemolysis. M. Dujarric de la Rivière has prepared a serum by inoculating the horse with increasing doses of toxin derived from four very toxic mushrooms. Hypodermic injections of this serum possess high prophylactic and therapeutic value when applied to laboratory animals. The results have been remarkable. Summoned to treat a family in which three persons had been poisoned simultaneously, the physician was unable to procure at the Pasteur Institute more than two ampules of the serum, and these he reserved for the two subjects who appeared most gravely affected. These two patients recovered, while the third, who had not received an injection, succumbed. The Congress of Hygiene, before which this communication was presented, passed a resolution recommending that supplies of this serum be kept in the hospitals, and, so far as possible, in the town halls of the villages, for the accommodation of physicians.

Franco-American Manifestations

An official mission, represented by Drs. Le Mée, de Martel, Clovis Vincent, and Hélie, has been sent to the United States by the minister of public instruction to study the principal medical and surgical centers, to create points of contact, and to render a special report to the minister.

At the banquet given by the Association des anciens médecins des troupes combattants to their American colleagues of the American Legion, short addresses of welcome were

delivered by Dr. Landolt and Dr. Forestier. Dr. Clovis Vincent, agrégé professor, spoke in glowing terms of the fraternal spirit which animated the medical bodies of the two countries. Dr. Edmond Gros, chief physician of the American Hospital at Neuilly; Dr. Kennon Danbrun, delegate of the Rehabilitation Committee, and Dr. G. Rambrend, formerly director of the Pasteur Institute in New York, responded in the name of the legionnaires.

Death of Professor Prenant

The Faculté de médecine of Paris has suffered another loss in the death of Dr. Prenant, professor of histology. Born at Lyons, Prenant pursued his medical studies at Nancy, and became, at that institution, agrégé professor, and later head professor, of histology. In 1907, he removed to Paris, having been appointed successor to Mathias Duval. He published many books, including a large, well known treatise on histology. He had been a member of the Academy of Medicine since 1911.

GENEVA

(From Our Regular Correspondent)

Sept. 30, 1927.

International Professional Association of Physicians

Dr. Decourt, general secretary of the International Professional Association of Physicians, and Dr. Vuilleumier, Swiss correspondent of the association, have just issued a report. They explain the mission allotted to them of going to Geneva to study, with the director of the International Bureau of Labor, ways and means of collaboration between this bureau and their own association. Before entering into conversation with Mr. Albert Thomas, director of the International Bureau of Labor, the two physicians interviewed those of his immediate collaborators with whom Dr. Vuilleumier had already come in contact and stated that the International Professional Association of Physicians was an organ of liaison between the various professional groups of physicians. The problems that the association attempts to solve refer only to the relationship of the physician to the state or to other large bodies. The work would comprise social medical organization, social hygiene, and the struggle against social scourges from the standpoint of the physician. It would also include the relationship of the practitioner to such matters as insurance and charity work.

Although the International Professional Association of Physicians is a liaison organization, it does not intend to interfere with the liberty of the national groups by speaking in the name of all. Its aim is to centralize all information that each group may furnish respecting medical activity in each country, from a strictly professional point of view. This body is not concerned with questions that might be put to it by the International Bureau of Labor regarding the practice of medicine. Yet, on account of the investigations made by the International Professional Association of Physicians, this body must know the opinions of practitioners communicated to the International Bureau of Labor, so that it can draw certain conclusions.

Each organization is a center of documentation and each is absolutely distinct from the other. The aim of the International Bureau of Labor is to collect documents concerning labor, either manual or intellectual, while the International Professional Association of Physicians collects only documents concerning medical intellectual labor. Both parties agreed that the two organizations could render mutual service by the exchange of documents without signing a contract.

In respect of social insurance, the International Professional Association of Physicians will be able to give information concerning the practice of medicine in general. The International Bureau of Labor has vainly looked for a competent international interlocutor. The data given on professional medical questions are frequently inexact and often insufficient, because the national professional bodies have not been consulted by their governments.

The Swiss delegates asked for details concerning the participation of physicians in international labor conferences. They received the following replies: (*a*) They could apply to their respective governments to obtain seats in the various national delegations to the conference. The decision on this point belongs exclusively to each government. (*b*) The International Professional Association of Physicians may resort to a procedure given in article 404 of section XIII of the peace treaty, which created the international organ of labor. This article stipulates that "the conference may include, in the commissions that it forms, technical councilors having a consultative but not a deliberative voice." Thus understood, these questions are of special interest to the medical profession because in the future it will be possible, by the intermediation of the International Bureau of Labor and International Labor Conference, for physicians to bring their desires to public notice.

As pointed out, the International Bureau of Labor was created to defend not only the interests of manual workers but also those of intellectual workers. In the various departments of the International Bureau of Labor, and especially in the International Labor Conference, the last one of which was held in Geneva this year, governments, employers' associations and workers' associations were represented, the delegates of the latter two being appointed by their respective governments. No physicians were appointed, so that on questions such as sickness insurance no opportunity was given of hearing what the medical profession might have to say. The Swiss federal authorities did not consider it necessary to consult the central committee of the Swiss federation of physicians respecting the replies to be made to the questionnaire sent to all governments by the International Bureau of Labor. The central committee asked for an explanation from Berne, and as the replies were considered insufficient the committee has again taken up the matter.

Death of Dr. Prevost

Dr. J. L. Prevost, honorary professor of the University of Geneva, died, September 12, at the age of 89. In 1865, while he was intern, Prevost, with Cotard, published a paper on softening of the brain, showing that the process was due to ischemia following an arterial embolism and not to an inflammatory process as had been supposed up to that time. In the same year Prevost published another paper in which he showed that infantile paralysis was due to destruction of the cells of the anterior horns of the cord. Again, in 1865, he published his first article explaining the pathogenesis and mechanism of conjugate deviation of the eyes in unilateral cerebral lesions.

Prevost was a founder of the Swiss Neurological Society. When the Faculty of Medicine was founded in 1876, he was appointed professor of therapeutics, and after the death of Professor Schiff, in 1897, he took over the chair of physiology, which he occupied until 1913. In 1909, the number of Prevost's publications amounted to 102.

In 1881, J. L. Reverdin and Constant Picot and Prevost founded the *Revue médicale de la Suisse Romande* and remained a co-editor until the end of 1919.

Conference on Therapeutic Products

An international conference is held each year in Geneva to study physiologic standardization of therapeutic products. This commission is composed of four Germans, two Austrians, three Englishmen, three Americans, and one representative

each from France, Netherlands, Denmark, Belgium, Norway and Canada. The work is divided. To Germany are assigned the arsphenamines, thyroid and ergot; to Austria, the anthelminthics; to Canada, insulin; to the United States, the vitamins, and to Netherlands, digitalis.

VIENNA

(From Our Regular Correspondent)

Sept. 30, 1927.

The Number of Beds for Tuberculous Patients

As compared with conditions before the war, the municipal center for the care of tuberculous patients has undergone extensive development, as may be seen from the report of the public health service of Vienna. In 1903 there were only three institutions, with 475 beds available for tuberculous patients. In 1926 there were nine tuberculosis institutes with a total of 1,115 beds; in addition there were 328 beds in the tuberculosis pavilion of the municipal hospital, 531 beds in the old people's home, and 373 beds in other institutions, which the city of Vienna has permanently rented. The total amounts to 2,347 beds. Furthermore, there are nine consultation centers for tuberculosis patients in operation, where trained physicians and nurses see to it that patients are directed to the right institution or are placed under proper supervision. In 1926, 15,084 examinations of suspects were made. The expenditures for the control of tuberculosis amounted to $350,000 in 1925 and to more than $400,000 in 1926.

The Fourteenth Assembly of German Railway Physicians

The fourteenth assembly of German and Austrian railway physicians was held in Vienna, August 29 to September 3. In addition to the transactions affecting solely railway physicians, much was presented that is important from the standpoint of general medicine. Dr. Schneider of Berlin expressed the view that the present recognizability of railway signals is in general satisfactory. Nevertheless it is dependent, to a certain extent, on weather conditions. Experiments, however, are in progress which, if successful (and the prospects are good), will lead to the automatic stopping of railway trains when an optical stop signal has been overlooked. Dr. Bloss emphasized the importance of the psychic factor in railway services, and recommended repeated psychoanalysis of employees performing responsible duties, as well as the careful selection, on mental grounds, of signal men and switchmen. Professor Shefler said that, whereas in Austria traumatic neurosis resulting from railway accidents is regarded still as a disease entitling the bearer to indemnification, in Germany neurosis of accidental origin has not been recognized, for the past two years, as entitling the patient to indemnity.

Prof. Wagner Jaueregg dealt with progressive paralysis and tabes among employees in the railway services. The early, apparently unimportant manifestations, such as loss of mental energy, increase rapidly in intensity, and may very soon give rise to serious accidents if the person affected is employed in the transportation department. In tabes, the early atrophy of the optic nerve and the lessened capacity to distinguish colors (especially red light) is an important symptom. Whereas, in the presence of associated mental disturbances, curative inoculation with malaria gives good results, enabling the patients to pursue again their previous occupations, involvement of the optic nerve cannot be influenced by malaria treatment.

Prof. Dr. Roepke took as his subject the semifinal and the final stages in combating tuberculosis. By means of immunization the attempt is now made to strengthen the infant and the growing child to such an extent that the so-called period of natural infection may be withstood and the child may develop a certain "age resistance." The final stage of the fight against tuberculosis lies in the attempt to eliminate the danger of infection by rendering persons with "open" tuberculosis innocuous and solving the problem of protection against the "cavity bearers." In this "final struggle," pneumothorax, thoracoplasty, and division of the phrenic nerves produce in suitable cases excellent results. Professor Roepke cited statistics showing that, in 1914, 14.3 per 10,000 of population died of tuberculosis. During the war, the number rose to 23 per 10,000, since which time there has been a steady decline in the rate (15.4 in 1920, 12 in 1924, and 10.7 in 1926). In the cities with more than 150,000 inhabitants the rate is now constantly below 10 per 10,000 population. Fewer patients enter sanatoriums than in former years. The course of the disease is now much less rapid or violent. A larger percentage of patients is cured, and chronic patients live longer. These facts show that we are now in a position to bring the crusade against tuberculosis to a successful finish.

Data from the Annual of the Statistical Bureau

The 1926 annual of the statistical bureau of the city of Vienna gives a survey of vital statistics. The decline in the birth rate gives cause for anxiety. In 1926, the deaths in Vienna exceeded the living births by 2,302. Figures for the whole republic show that in 1924 the excess of births over deaths was 46,961; in 1925, 40,853, and, in 1926, 28,220. The infant mortality for the whole of Austria was 18 per cent for legitimate and 30 per cent for illegitimate children. In Vienna the relation is the reverse, the infant mortality for legitimate children being 19 per cent and for illegitimate children, 11 per cent. This is explained by the fact that the city of Vienna has an excellent welfare service for the new-born, which inures primarily to the benefit of the poorer classes, among which illegitimate births are much more frequent than among the well-to-do classes. At the same time there is a marked increase of the illegitimate as compared with the legitimate births. The care of the poor children gives much better results than the care that the rich receive. The high mortality of young children (aged 1 to 5) contributes in large measure to the high general mortality figures, although also the child mortality figures are declining steadily. Thus, during the period 1900 to 1913, the general mortality rate for the whole population was 16.3 per thousand, 20 per cent of the deaths being caused by tuberculosis. During the period 1913 to 1919, the general mortality was 20.8 per thousand population, with 29 per cent of the deaths due to tuberculosis. In 1925, the general mortality dropped to 12.2 per thousand, with 15 per cent of the deaths resulting from tuberculosis. In 1900, the child mortality (ages 1 to 5) was 178 per thousand, of all deaths; in 1913, 148 per thousand; in 1919, 156 per thousand, and, in 1925 and 1926, it fell below 80 per thousand of all deaths. A comparison has been made between the tuberculosis mortality in Vienna and Austria and that of Germany and its large cities. The tuberculosis mortality per 10,000 population for three successive years was as follows:

Year	Vienna	Austria	Berlin	Germany
1924.....	22.5	18.6	12.0	12.0
1925.....	19.6	17.3	10.0	10.7
1926.....	20.5	17.6	9.7	10.1

Although the deaths from tuberculosis in Vienna and Austria are slowly decreasing, they are nevertheless twice as high as in Germany, which is evidence of the great economic crisis in this country, in which almost every fourth workman is habitually out of work.

The Relations Between Height, Weight and Length of Life

In an address on the subject of emaciation and nutrition, Dr. Hahn of Vienna discussed recently the relations between the weight and the height of a healthy person. In general, the rule is given that a healthy adult should weigh as many kilograms as his height exceeds 100 cm.; that is to say, a

man whose height is 170 cm. should weigh 70 kilograms. Exact measurements have confirmed the general correctness of this rule; however, in the earlier years of life, a slight overweight and in the middle and later years a slight underweight should be sought for the sake of perfect health. A weight above normal is not conducive to longevity; even from 10 to 15 kilograms overweight is too much, for the life expectancy tables of the large life insurance companies record for such persons a life expectancy considerably less than for persons of normal weight. Large excess of weight (30, 40 or 50 kilograms) constitutes a very great life hazard. A woman whose height is 160 cm. and whose weight is 100 kilograms is 40 (100 — 60) kilograms overweight and her life expectancy is reduced by 80 per cent. These details were emphasized: In younger persons a slight excess in weight lessens the danger from tuberculosis, whereas in juveniles who are markedly underweight the danger is greater. For that reason, the so prevalent reducing "cures" for young women are dangerous if carried to extremes. During the years of growth and the first years of adult life, that is, up to about the age 35, tall persons, especially, should avoid a subnormal weight, for statistics show that such persons as present a weight 20 per cent under normal have an increased mortality of 30 per cent, which continues up to age 40. Most persons who reach an advanced age are thin when they pass midlife. The stout and the corpulent succumb in the fifth or the sixth decade to a heart, kidney or lung affection (pneumonia). It is interesting to note that in Vienna there are about 30,000 women who weigh more than 100 kilograms (according to Dr. Hahn's estimate), but not so many men.

BERLIN

(From Our Regular Correspondent)

Oct. 1, 1927.

The Tuberculosis Institute in Hamburg

Before the war, there was an institute for tuberculosis research at the Eppendorf Hospital in Hamburg, but owing to lack of funds it had ceased to function. Professor Brauer, the present medical director of the hospital, has, however, secured contributions from all the German life insurance companies and the institute is now on a sound financial basis. On the occasion of the Nordwestdeutsche Tagung der Tuberkulose-Aerzte in Hamburg, September 15, the revived institute was opened under the name of the Deutsche Forschungsanstalt für Tuberkulose zu Hamburg.

Health Conditions in Penal Institutions

Dr. Hellstein has an article in the *Archiv für Sozialhygiene* on health conditions in penal institutions, with especial reference to tuberculosis. He reaches the following conclusions: 1. In the penal institutions of Germany, health services are now developed to such an extent that there appear to be practically no injuries due to neglect of health. 2. Tuberculous prisoners receive special care. 3. Penal institutions are not breeding centers for tuberculosis; on the contrary, they help to combat that disease. 4. Sick prisoners often receive better care than they would be likely to have if they were free. 5. The decrease in tuberculosis in penal institutions appears to have reached its lowest point, the improvement being due in part to the general lowering of criminality. 6. The food that the prisoners receive meets every requirement. 7. The increase of crime among minors is regrettable and demands special attention and the institution of preventive measures. 8. The amount of sickness in penal institutions is, in general, relatively small. 9. The suggestion that tuberculous criminals be given special consideration, on account of their sickness, in determining their degree of responsibility would probably be going too far. Their sickness might constitute a mitigating circumstance but could not exempt them from punishment. 10. The proposal for a special professional department for tuberculous prisoners should be given consideration.

In a recent account, Dr. Bürger, the newly appointed chief medical inspector at the Moabit jail in Berlin, expresses the view that the Prussian tuberculosis centers should be further developed. Thus far, there is a special tuberculosis department in the penitentiary at Sonnenburg and there is the large tuberculosis department in Glatz, to which places the patients from all other institutions are brought.

He emphasized further that, under confinement in prison, the mere suggestion of a disease in the mind of the prisoner might easily give rise to a serious illness. Particularly, the epileptics—those subject to periodic attacks, and those entertaining thoughts of suicide—need careful supervision. Bürger has issued orders in the institutions under his charge that epileptics must never be kept in solitary confinement. Nor should epileptics be placed in the upper stories of the prison. They should be kept on the ground floor, so that, in the event of an attack, they cannot throw themselves down from the upper stories. A great care for the physician are, furthermore, the alcohol, the morphine, and the cocaine addicts; also the psychopaths, who must be given special treatment. Among the latter, quarrelsome patients are especially troublesome. Cases of acute mental disturbance are not rare. They develop, for the most part, from the soil of mental inferiority, and are often precipitated by the emotional excitement caused by detention in jail.

In addition to the medical care that the physician gives, he should serve the patients as adviser, helper, teacher and comforter. Under these circumstances, the demand of one physician for each 500 patients is reasonable. The number of physicians engaged at the present time is inadequate, but it is hoped to increase the number in the near future. Drugs may be administered to the prisoners only by graduate nurses (holding a state diploma) on the basis of prescriptions given by a physician.

Constitution and Suitability for Employment

The Deutsche Gesellschaft für Gewerbehygiene (society for industrial hygiene) has appointed a committee to inquire into and promote hygienic conditions for the performance of labor. The object of the commission is to establish criteria for the activities of workmen on a basis corresponding to their mental and physical qualifications and their special experience. In this connection, the committee attaches importance to the problem of the relations between constitution and suitability for a given form of employment. Special interest attaches to the question of internal secretion, and to the question of hereditary disposition to tuberculosis and nervous disorders.

Marriages

HARRY EDWARD ENGLISH, Rensselaer, Ind., to Miss Marjorie Stahl of Sheridan, June 16.

JAMES EVERETT SANNER to Miss Elizabeth Rebb Fisher, both of Baltimore, October 12.

RENO ARTHUR AHLVIN, Joliet, Ill., to Miss Elsie Schlick of East St. Louis, September 28.

WALTER C. NALTY to Miss Mary Pinter, both of Grand Mound, Iowa, September 20.

JOSEPH H. LUCINIAN, Miami, Fla., to Miss Nevart Casparian of Baltimore, September 17.

WENDELL W. AYRES, Buffalo, to Miss Helen C. Wing of Upland, Ind., September 8.

FRANK I. RIDGE to Miss Alberta Sharpe, both of Kansas City, Mo., recently.

Deaths

General William Harrison Kemper ✠ Muncie, Ind.; Long Island College Hospital, Brooklyn, 1865; emeritus professor of the history of medicine, Indiana University School of Medicine, Indianapolis; member of the House of Delegates of the American Medical Association, 1902-1903; past president and treasurer of the Indiana State Medical Association and past president of the Delaware County Medical Society; Civil War veteran; at one time county coroner and member of the city council; author of "The World's Anatomists" and the "Medical History of the State of Indiana"; aged 87; died, September 26, at the Home Hospital, of influenza.

Charles David Spivak ✠ Denver; Jefferson Medical College of Philadelphia, 1890; chief of clinic, gastro-intestinal diseases, Philadelphia Polyclinic, 1894-1895; formerly lecturer on diseases of the gastro-intestinal tract, professor of anatomy and professor of clinical medicine, Denver and Gross College of Medicine, Medical Department, University of Denver; member of the American Gastro-Enterological Association; secretary and gastro-enterologist to the Sanatorium of the Jewish Consumptives' Relief Society, Sanatorium; librarian, Denver Academy of Medicine in 1905; aged 66; died, October 17, of carcinoma of the gallbladder and liver.

Talbot Roland Chambers, Jersey City, N. J.; Medical Department of Columbia College, New York, 1878; member of the American Academy of Ophthalmology and Oto-Laryngology, and the American Laryngological, Rhinological and Otological Society; on the staffs of the Christ and Jersey City hospitals, and formerly on the staffs of the Orange (N. J.) Memorial Hospital and the North Hudson Hospital, Union City; aged 72; died, September 4, at Peapack, as the result of a perforated gastric ulcer.

Edward Henry Higbee, Jr., ✠ St. Louis; Missouri Medical College, St. Louis, 1897; assistant professor of ophthalmology, St. Louis University School of Medicine; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staffs of the Mullanphy, St. Louis City, Maternity and Isolation hospitals and the City Sanitarium; formerly on the staff of St. John's and St. Anthony's hospitals; aged 53; died, September 20, at St. Luke's Hospital, of pneumonia.

John Holliday Oliver ✠ Indianapolis; Medical College of Indiana, Indianapolis, 1881; professor of surgery, Indiana University School of Medicine, Indianapolis; on the staff of St. Vincent's Hospital and formerly on the staffs of the Indianapolis City Hospital and the Protestant Deaconess Hospital, now known as the Indiana Christian Hospital; aged 68; died, October 16, at St. Vincent's Hospital, of cerebral hemorrhage.

Francis Pollard Quinn ✠ Milwaukee; Marquette University School of Medicine, Milwaukee, 1924; clinical instructor in orthopedic surgery at his alma mater; on the staffs of the Marquette Hospital, the Misericordia Hospital, and St. Joseph's Hospital, where he died, August 30, of aplastic anemia, aged 30.

Frank Stanley Hope ✠ Portsmouth, Va.; University of Virginia Department of Medicine, Charlottesville, 1876; for several years mayor of Portsmouth; formerly on the staffs of the Parrish Memorial Hospital and the King's Daughters' Hospital, where he died, September 26, aged 72, of acute pyelonephritis.

Frank Wilbert Wallace, Oregon City, Ore.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1923; member of the Oregon State Medical Society; for three years city and county health officer; aged 27; died recently, of epidemic encephalitis, at the home of his parents in Nelson, B. C., Canada.

Nicola Mariani ✠ New Haven, Conn.; University of Naples, Italy, 1893; member of the board of education and for eleven years member of board of health; was decorated by the king of Italy; on the staff of the Hospital of St. Raphael; aged 59; died, September 17, at Torre del Greco, a suburb of Naples, Italy.

Benjamin F. Lounsbury ✠ Chicago; Northwestern University Medical School, Chicago, 1907; associate professor of clinical surgery, University of Illinois College of Medicine; chief of staff of Washington Boulevard Hospital; aged 51; was killed, October 21, in an automobile accident.

Bernard Jerome Henney, Carnegie, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; member of the Medical Society of the State of Pennsylvania; aged 48; died, September 16, of carcinoma of the neck.

Abraham Franklin Strickler, Sleepy Eye, Minn.; University of Michigan Medical School, Ann Arbor, 1898; member of the Minnesota State Medical Association; served during the World War; aged 54; died, September 12, at St. Mary's Hospital, Minneapolis, of carcinoma of the liver.

Simon H. Baum ✠ Uniontown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1897; past president of the Fayette County Medical Society; formerly county coroner; on the staff of the Uniontown Hospital; aged 52; died, September 24, following a long illness.

F. William Grundmann, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1888; St. Louis College of Physicians and Surgeons, 1891; formerly professor of surgical pathology, St. Louis College of Physicians and Surgeons; aged 68; died, August 5, of hypernephroma.

Caroline Amelia Osborne ✠ Worcester, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1899; on the staff of the Hospital Cottage for Children, Baldwinsville; aged 61; died, September 17, at Gardner, of pneumonia following an abscess of the throat.

Arthur Christian Gewert, Cincinnati; University of Cincinnati College of Medicine, 1911; formerly on the staff of the Cincinnati General Hospital; aged 42; died suddenly, September 16, at Reading Ohio, of acute dilatation of the heart and gastritis.

William Parker Fowler, Rochester, N. Y.; New York Homeopathic Medical College and Hospital, 1872; aged 78; died, September 6, at the Highland Hospital, of hypertrophy of the prostate and myocarditis.

John Shoenberger Crawford, Greensburg, Pa.; Hahnemann Medical College of Philadelphia, 1875; member of the Medical Society of the State of Pennsylvania; aged 73; died, July 24, of arteriosclerosis.

Francis Wilber Firmin, Los Angeles; Western Reserve University School of Medicine, Cleveland, 1867; member of the Ohio State Medical Association; aged 85; died, October 2, of heart disease.

George Harvey Wallace ✠ Minetto, N. Y.; Syracuse University College of Medicine, 1907; formerly on the staff of the Oswego (N. Y.) Hospital; aged 47; died, September 17, of pneumonia.

George W. Stark, Charlottesville, Va.; Washington University School of Medicine, Baltimore, 1877; member of the Medical Society of Virginia; aged 72; died, August 7, at Blenheim.

Charles Franklin Marlin Butterfield ✠ Rock City, Ill.; Chicago College of Medicine and Surgery, 1909; served during the World War; aged 47; died, September 8, of angina pectoris.

Charles Albert Beach, Puyallup, Wash.; Homeopathic Hospital College, Cleveland, 1883; aged 69; died, in August, at the Valley Hospital, of nephritis and heart disease.

Dexter Hitchcock, Norwalk, Conn.; New York Homeopathic Medical College, 1873; formerly on the staff of the Norwalk Hospital; aged 81; died suddenly, July 15.

George F. Poole, New York; Western Reserve University School of Medicine, Cleveland, 1890; aged 62; died, August 8, at the New York Hospital, of lymphosarcomatosis.

Benjamin Frenkel, New York; University of Texas School of Medicine, Galveston, 1896; aged 51; died, September 21, at the Bellevue Hospital, of cerebral hemorrhage.

James B. Brown, Denver; Denver College of Physicians and Surgeons, 1899; aged 59; died, August 26, at the Park Avenue Hospital, as the result of an attack of influenza.

Will H. Kelly, Covington, Ky.; Medical College of Ohio, Cincinnati, 1881; aged 69; died, September 18, of carcinoma of the transverse colon and diabetes mellitus.

James Claywell Snyder, Seattle; Cooper Medical College, San Francisco, 1903; member of the Washington State Medical Association; aged 53; died, August 21.

George G. Roberson, Utica, Mich.; Detroit Medical College, 1877; formerly bank president, and for many years druggist; aged 72; died, June 3, of heart disease.

Iber J. Burress, Anderson, S. C.; Baltimore Medical College, 1898; aged 56; died, June 23, at a local hospital, of acute myocarditis and acute nephritis.

James McFadyen, Jr., Milo, Maine; Medico-Chirurgical College of Philadelphia, 1905; member of the Maine Medical Association; aged 46; died, August 8.

Guy Ernest Clift, Des Moines, Iowa; Drake University College of Medicine, Des Moines, 1912; aged 45; died, March 19, of hypertrophic cirrhosis of the liver.

Peter Case Young ✠ Ringoes, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1873; aged 73; died, May 20, of bronchopneumonia.

James S. Lafferty, Concord, N. C.; University of Maryland School of Medicine, Baltimore, 1881; aged 74; died, September 12, of cerebral hemorrhage.

Charles Lafayette Morgan, Alliance, Ohio; College of Physicians and Surgeons, Baltimore, 1879; aged 69; died recently, of chronic cholecystitis.

Edmund L. Sharpe, San Antonio, Texas; University of Nashville (Tenn.) Medical Department, 1885; aged 64; died, April 27, of cerebral hemorrhage.

Francis H. Hemphill, Rensselaer, Ind.; Central Medical College of St. Joseph, Mo., 1898; aged 55; died, September 13, of a self-inflicted bullet wound.

Earl Alexander Harris, Springfield, Mo.; Meharry Medical College, Nashville, 1908; aged 46; died, September 13, at Toledo, Ohio, of pneumonia.

Arthur Edward Grant Forbes, Lunenburg, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., 1906; died, July 3, of septicemia.

William Henry Sorrell, Sylacauga, Ala. (licensed, Alabama, 1886); aged 77; died, July 31, at the Fraternal Hospital, Birmingham, of nephritis.

Emery Bissonnette, Ste Agathe des Monts, Que., Canada; University of Montreal Faculty of Medicine, Montreal, 1923; aged 30; died, August 11.

John James McFadden, Stony Mountain, Man., Canada; University of Toronto (Ont.) Faculty of Medicine, 1879; aged 70; died, August 9.

J. D. Sasser, Jr., Middleton, Tenn.; University of Louisville (Ky.) School of Medicine, 1884; aged 68; died, May 16, of cerebral hemorrhage.

Herman Emanuel McCollum ✠ Laramie, Wyo.; St. Louis College of Physicians and Surgeons, 1901; aged 49; was drowned, September 25.

Gordon Edward Thompson, Hardisty, Alta., Canada; McGill University Faculty of Medicine, Montreal, Que., 1921; aged 31; died recently.

John Trumbull Reeves, Vandalia, Ill.; Keokuk (Iowa) Medical College, 1891; aged 67; died, September 13, of carcinoma of the face.

John Benjamin Sims, Center, Texas (licensed, Texas, under the Act of 1907); aged 52; died, August 28, of a malignant tumor of the kidney.

James Percy Russell ✠ South Brewer, Maine; Medical School of Maine, Portland, 1903; aged 56; died, May 28, of accidental drowning.

Charles P. James ✠ Tacoma, Wash.; Trinity Medical College, Toronto, Ont., Canada, 1888; aged 63; died, August 13, of heart disease.

Jesse T. Little, Pittsburgh; University of the South Medical Department, Sewanee, 1897; aged 70; died in August, of angina pectoris.

Lark Taylor, San Saba, Texas; Memphis (Tenn.) Hospital Medical College, 1891; aged 59; died, August 3, of cerebral hemorrhage.

Septimus Austin Knipe, Swamp, Pa.; Jefferson Medical College of Philadelphia, 1866; aged 86; died, September 4, of senility.

Charles Edwin Patterson, Grand Rapids, Mich.; Detroit Medical College, 1879; aged 70; died, August 27, of senile dementia.

Bial Francisco Bradbury ✠ Norway, Maine; Southern Medical College, Atlanta, 1882; aged 66; died, April 22, of angina pectoris.

William Henry Smith, Memphis, Tenn.; Memphis Hospital Medical College, 1903; aged 45; died, September 15.

Clarence Irving Sparks, Easthampton, Mass.; Baltimore Medical College, 1898; aged 50; died, September 15.

Henry F. C. Muller, Ravena, N. Y.; Albany Medical College, 1887; aged 60; died in June, of myocarditis.

CORRECTION

Dr. Edstrom Is Recovering.—The report of the death of Dr. Andrew J. Edstrom of Stromsburg, Neb., published in THE JOURNAL, October 15, was erroneous. Dr. Edstrom was seriously hurt in an automobile accident but is recovering.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

CARL C. LANTZ—QUACK

Another Piece of Medical Mail-Order Quackery Debarred from the Mails

For many years Carl C. Lantz of New York City and Atlantic Highlands, N. J., has been quacking it through the mails. The Bureau of Investigation of the American Medical Association has, during the years, collected a few widely scattered pieces of publicity put out by Mr. Lantz. We find that the *Cosmopolitan Magazine* for July, 1906, contained a quarter-page advertisement of "The Adonis," sold at that time by Mr. Lantz, who was trading as the Lantz-Adonis Company in New York City. The Adonis, said Mr. Lantz, "preserves and increases mental, physical and genital vigor." *Vanity Fair* for April, 1916, contained an advertisement of four nostrums put out by Lantz, who at that time operated under the trade name C. C. Lantz Laboratories. The preparations were "Lantz Face Balm," "Lantz Hair Life," "Lantz Foot Tingle," and "Lantz Riggs Remedy." These were all sold on the mail-order plan.

YOUNG MAN!
DON'T SLIP! KEEP FIT, enjoying the exhilarating comfort of a
LANTZ SUPPORTER
Natural, scientific. (Not a "suspensory.") It takes the tension off vital nerve center, makes a man light on his feet, with freedom of action for mind and muscles. Gives a refined appearance.
Some "suspensories" are injurious; my prostatic treatise tells why.
Absorbent linen sack, elastic bands, gold plate, adjusting clips and hook, weight 1 ounce, $2 post free; sizes: large, medium, small. Give waist and size. Not sold in Stores.
C. C. LANTZ
Lock Box 33
Atlantic Highlands, N.J.
My anatomically illustrated treatise, every man should hold, sealed for 10 cents; free, with order.

In 1918 the Bureau of Investigation obtained Mr. Lantz' sixteen-page booklet which described the "Lantz Absorbent Pastilles," which were sold as "the modern remedy for the prostate gland, the seat of sexual weakness." The same booklet, in addition to advertising the Pastilles, also advertised the "Lantz Supporter." Slipped into the booklet was a four-page leaflet advertising Mr. Lantz' "Vacuum Congestor," a device alleged to be sold as "a means to develop, strengthen and enlarge shrunken or naturally small organs." It was, in fact, one of the mechanical masturbators. In 1924 and 1925 Mr. Lantz was advertising under his own name in *Physical Culture*, featuring at that time the Lantz Supporter.

On October 10, 1927, the Postmaster General, having been presented with evidence to satisfy him that Lantz was conducting a fraudulent scheme through the mails, issued a fraud order against Carl C. Lantz covering both the New York and the Atlantic Highlands addresses.

The postal authorities notified Lantz on September 10, 1927, that on October 5 he would be called on to show cause why a fraud order should not be issued against him, and a memorandum of the charges was sent to Lantz. On the date set, Lantz appeared at Washington in person, and the hearing was held. The Solicitor for the Post Office Department, in his memorandum to the Postmaster General recommending the issuance of a fraud order, gives in detail the facts in the case.

It seems, from the memorandum, that Lantz is over sixty years of age and started his mail-order quackery in 1901 in

New York City; about 1918 he also opened a mail address at Atlantic Highlands, N. J. Lantz' business was not incorporated, and he had only one employee—his wife. The Lantz Absorbent Pastilles were merely suppositories which cost Lantz 25 cents a box of twenty-four. He sold them for $8 a box. At the hearing Lantz admitted that the Norwich Pharmacal Company of Norwich, N. Y., supplied the formula for and made the Pastilles for him. He admitted further that he is not a physician, chemist or pharmacist and has no medical training. In his advertising Lantz represented that the Pastilles were curative in "prostatic disorders," and promised to refund money in the case of persons who were not satisfied. The government presented evidence to show that he did not carry out his refund agreement, and the government also showed that the only effect of the use of the suppositories would be a movement of the bowels. Lantz was unable to offer any evidence to controvert the government's testimony.

Lantz also sold what he described as "Lantz Crayons," which were said to be an effective treatment for "chronic discharge or gleet, stricture," etc. The government produced evidence to show that the Crayons would be wholly worthless for stricture and would not be an effective treatment for gleet.

Lantz' circular describing his Vacuum Congestor contained such statements as:

"This develops, enlarges and strengthens, with the first application. Then you'll know. Does not excite the sexual functions, but on the contrary, is the greatest aid in breaking the suicidal habit of masturbation.

"For the pitiable unfortunate, with a shrunken or naturally small part, the Vacuum Massage Method is a boon. It accomplishes in a pleasant convenient way, that which many have spent thousands of dollars for, without attaining."

The government proved that the quoted representations are false and declared that the device "is nothing more nor less than a mechanical masturbator." The Solicitor's memorandum, enclosing the case against Lantz, makes this statement: "Lantz advertises in the *Police Gazette* and similar publications. He estimated that during 1926 his advertising cost between $1,500 and $2,000. He stated that he receives between 30 and 40 letters a day and that his gross receipts are between $3,000 and $4,000 per annum."

In view of the evidence, the Solicitor for the Post Office Department recommended the issuance of a fraud order. Since October 10 all letters addressed to Carl C. Lantz have been stamped "fraudulent" by the postal authorities and returned to their senders.

Correspondence

STRICKLER'S "DISEASES OF THE SKIN AND SYPHILIS"—REPLY TO A REVIEW

To the Editor:—I am taking advantage of your offer permitting the correction of any misstatements which have appeared in the review of my book entitled "Diseases of the Skin and Syphilis," which was published in THE JOURNAL, August 13, p. 546. In setting forth the facts which justify my contentions, I have adopted as a basis of comparison a number of well known and recognized textbooks on diseases of the skin, such as those of Ormsby, Sutton, Sequeira and Schamberg.

The severest criticism leveled at my book concerns the amount of space devoted to such fundamental subjects as the anatomy and physiology of the skin as well as the pathology and bacteriology. Sutton, in the sixth edition of his book, a volume of 1,200 pages, devotes twenty-seven pages to anatomy and physiology, more than one third of which is devoted to illustrations; Ormsby, in a book of 1,170 pages, devotes thirty-four pages to these subjects; Schamberg, in a book of 620 pages, gives ten pages to these subjects, while Knowles, in a book of 546 pages, devotes the same space as Schamberg; and Sequeira, in a book of 650 pages, devotes six pages to anatomy and physiology of the skin. Study of these figures shows that my book, which is somewhat over 700 pages, in devoting twelve pages to anatomy and physiology of the skin, is certainly not out of line. Pathology and bacteriology of the skin receive mention in only one book, that of Ormsby, and he devotes six pages, while my book devotes three and one-half pages to these subjects. Neither Sutton, Knowles, Schamberg nor Sequeira makes any mention of pathology or bacteriology in the introductory chapters of their work. Certainly an unbiased comparison of the amount of material in my book compared with the others shows that I have devoted more space and given greater attention to these fundamental branches of dermatology than any book of equal size.

The critic has condemned my consideration of eczema. Every known textbook considers eczema as divided into various primary and secondary types. Owing to the arrangement of the facts in this work of mine, the casual observer may, on superficial examination, feel that my discussion of eczema is somewhat disconnected; but, if read carefully, the only impression and the only conclusion one can arrive at is that eczema is a single entity, a single disease which may appear under various guises.

The reviewer makes the statement that pompholyx is no longer considered a definite disease. Every known textbook on dermatology, Sutton, Ormsby, etc., considers pompholyx as a separate skin condition. In my own work, I see quite a great deal of pompholyx, and in view of my experience I felt it wise to devote considerable space to this disease.

This book of mine was criticized because three and one-half pages were devoted to pompholyx and three and one-half to dermatitis herpetiformis. Such an authority as Sutton devotes almost six pages to pompholyx and almost eight pages to dermatitis herpetiformis. I mention this to show that my book is not out of line in the assignment of space of the diseases so specifically criticized by the reviewer. Schamberg devotes three pages to dermatitis herpetiformis and Knowles an equal amount of space. Certainly all these authors cannot be wrong and the critic right. Can the reviewer mention any small work on dermatology which considers occupational dermatoses, for the discussion of which I am criticized? There is no textbook on dermatology which gives any attention to the occupational dermatoses. In fact, I regard this part as most important.

And finally, a word about the illustrations. The critic states that the colored plate of xeroderma pigmentosum is one that might have been taken from Bateman's Atlas of 1830. This is an example of the superficial way in which the entire book was reviewed, for evidently the initials of the artist who painted this picture were overlooked, though plainly marked on the illustration.

I appreciate the opportunity THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has afforded me of publishing these facts, as it shows a spirit of trying to rectify any wrong done.

ALBERT STRICKLER, M.D., Philadelphia.

ABSCESS OF THE LUNG

To the Editor:—Referring to the editorial in THE JOURNAL, October 8, page 1253, concerning abscess of the lung, it would have been productive of greater good if it had contained mention of the fact that many cases diagnosed abscess of the lung are in reality cases of pulmonary gangrene due to anaerobic organisms, notably spirochetes and fusiform bacilli. These cases may be frequently successfully treated by arsphenamines.

B. S. KLINE, M.D., Cleveland.
Chief of Laboratory, Mount Sinai Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF ACUTE ALCOHOLIC INTOXICATION

To the Editor:—Occasionally I am called to prescribe for patients suffering from drunkenness in one of the various stages who have but a limited time for recuperation. What are the best methods of treating this condition, and the quickest ways of "sobering up" a patient. Please omit name.

M.D., Wisconsin.

ANSWER.—A hypodermic injection of apomorphine hydrochloride (0.006 Gm.) is probably the quickest way of "sobering up" an alcoholic patient. Within ten minutes it is likely to cause vomiting, thereby preventing further absorption of the poison. In addition, the emesis caused by apomorphine is followed by a particularly well marked stage of sedation, which is especially useful in the stages of excitement caused by acute alcoholism. It is probably of advantage to add strychnine (0.002 Gm.) to the apomorphine, thereby antagonizing as much as possible the depression of circulation and respiration without interfering with the quieting effect of the apomorphine on the brain. Of course, in the stage of depression, this treatment would be contraindicated, and stimulants, such as hot black coffee, with evacuation by lavage would have to be resorted to.

SHOES FOR CHILDREN

To the Editor:—What is the consensus of the leading pediatricians with regard to the proper shoes for babies? I have been under the impression that high shoes were more desirable than low for children learning to walk. This has been disputed by local shoe men. Please omit name.

M.D., Kansas.

ANSWER.—There is little room for discussion as to the value of high shoes over low shoes for most children, including those learning to walk. One has just to observe the child in oxfords to note the prominence of the inner border of the foot in the midtarsal region, which is due to pronation or downward and inward rotation of the bones of this region, especially the scaphoid and first cuneiform. With this depression there goes stretching and tension on the ligaments between the scaphoid and first cuneiform and between the scaphoid and the astragalus. The ankle joint does not receive protection from low shoes, but does receive protection and support by high shoes.

With pronation of the foot there is usually seen a mediad curve of the achilles tendon, the so-called Helbing sign. The high shoe which gives support to the midtarsal region and to the ankle joint tends to favor the adduction of the fore part of the foot and the production of varus, which are usually beneficial.

RINGWORM OF THE FEET

To the Editor:—In this section I find many patients afflicted with a certain foot condition not entirely clear to me. There is an intense itching between and under the toes, accompanied by a secretion of a foul smelling serum, not perspiration, which coagulates and crusts either in a few hours or on drying. The itching is so intense that soon the patient has removed the epidermis in whole or in part by the scratching or rubbing trying to relieve the condition. In some of the severer cases there is an intertrigo (erythematous or inflammatory) associated with this condition of the toes, and occasionally one sees blebs forming on the plantar surfaces also. These vesicles, if not opened and drained, sometimes become 1 inch in diameter, and are raised about one-eighth inch. After they break, there is wide scaling on an erythematous base. This condition is more or less chronic, frequently recurring, and is found in patients of both sexes and all ages and occupations. It does not yield readily to treatment for hyperhidrosis or epidermophyton. Will you kindly suggest diagnosis and treatment? Kindly omit my name.

M.D., California.

ANSWER.—The picture given here is a so typical of eczematoid ringworm that it can hardly be ruled out, certainly not because it has not yielded to treatment for that condition. That is another of the typical earmarks of eczematoid ringworm. An earnest effort should be made to confirm this diagnosis by removal of the roof of one of the small vesicles, placing it on the slide with the inner side up, covering with strong potassium or sodium hydroxide solution and a coverslip and, after waiting a short time for the alkali to clear it, examining with a high dry lens for mycelium and spores. Cultures on some sugar mediums, kept at room temperature from a week to three weeks, may succeed if the fungus cannot be found by direct examination of the vesicle roof. In the moist stage, removal of the tops of the vesicles and cool wet dressings of solution of aluminum acetate diluted with fifteen parts of water should give relief. The feet should not be soaked in hot water, for this encourages the formation of vesicles and the recurrence of the disease when about cleared up. When vesicles cease forming, a change to Whitfield ointment (from 2 to 6 per cent salicylic acid with twice as much benzoic acid in ointment of rose water or petrolatum) may be made. If this does not benefit the patient, from 2 to 5 per cent iodine in benzene may be painted on once a day. When the skin becomes too dry, one may alternate with the Whitfield ointment, not with a mercurial ointment, for this often causes irritation after the use of iodine. Ointment of ammoniated mercury or of yellow mercuric oxide may be used with good effect in some cases in which iodine has not been recently applied. Chrysarobin in mild strength, about 2 per cent, may be used in the later stage. Roentgen-ray treatment, one-fourth erythema dose once a week, is helpful, but strong irritants should not be used with it. There are many other preparations cited in the literature, because these infections differ greatly in their response to treatment. The successful treatment should be kept up for at least a month after apparent cure, in the effort to prevent recurrence.

INTRAVENOUS USE OF SODIUM THIOSULPHATE

To the Editor:—Would you give me whatever information is available regarding the intravenous use of sodium hyposulphite? Is it perfectly safe to give 20 cc. of a 20 per cent solution or 100 cc. of a 4 per cent solution intravenously? What are the effects and contraindications?

M. A. RAMIREZ, M.D., New York.

ANSWER.—Such administration would probably be safe enough, though a dose of 2 Gm. of sodium thiosulphate (sometimes called sodium hyposulphite) given intravenously is usually not exceeded, and a 10 per cent solution is the strength most commonly employed. In the doses given, obvious effects are not noted, excepting those that might be produced by intravenous injection of any other hypertonic solution. It is questionable whether the therapeutic effects that have been secured in arsphenamine and other forms of dermatitis might not be due to change in the condition of the blood colloids and consequent "foreign protein reaction" rather than to antidotal effect on the metal ion. If the latter is secured, it would be by formation of a less ionized metal compound. Preponderatingly negative animal experiments render antidotal action in systemic metal poisoning quite doubtful. The contraindications are not known.

BISMUTH BY MOUTH IN SYPHILIS

To the Editor:—Why should not bismuth by mouth be of benefit in syphilis, especially in the mild tertiary lesions? That bismuth is absorbed from the stomach and intestine is well known. In fact, one can produce bismuth poisoning through that route. The dose of bismuth hypodermically is so small that there ought to be, at least, that much absorption from the stomach. Has any research work been done to determine the effect of bismuth by mouth on syphilitic lesions?

M.D., Utah.

ANSWER.—The occasional cases of poisoning from bismuth compounds taken by mouth would seem to indicate that bismuth is absorbed in appreciable quantities from the intestinal tract. However, Resnik (Bismuth Poisoning Following Oral Administration of Bismuth Subnitrate, *Bull. Johns Hopkins Hosp.* **38**:333 [May] 1926) believes that the poisoning in these cases is rarely due to metallic bismuth. According to Sollmann (A Manual of Pharmacology, ed. 3, Philadelphia, W. B. Saunders Company, 1926, p. 990), the poisonous effects of insoluble bismuth compounds may be the result of nitrate effects, capillary thrombosis caused by bismuth sulphide, chronic bismuth poisoning, or the acute poisoning resulting from soluble corrosive bismuth salts. Sollmann writes, "The corrosive soluble salts are absorbed more extensively, and even the insoluble salts may be absorbed sufficiently from extensive burns to produce poisoning."

In the treatment of syphilis with bismuth, the object in view is similar to that when mercurial compounds are used intramuscularly; namely, to establish depots of the drug, which are slowly but continuously absorbed. This object could not well be attained by administration of bismuth by mouth. Furthermore, since its absorption from the gastro-intestinal

tract seems to vary with individuals and with conditions, uniformity in dosage would be uncertain or even impossible.

Some research in the treatment of syphilis apparently has been done, using bismuth by mouth. G. W. Raiziss, M. Severac and W. Winicov (Compounds of Bismuth in the Treatment of Syphilis, *Am. J. Clin. Med.*, August, 1923) review the work of various authors with especial emphasis on sodium (and potassium) bismuth tartrate. They write, "Administration per os had some prophylactic effect." This sentence was published in 1923 and is in retrospect of earlier European work. Yet Sollmann in the 1926 edition of his book does not recommend the use of bismuth by mouth in syphilis.

ABNORMAL SENSE OF TASTE

To the Editor:—I have a patient who has quite a bit of trouble because of the taste buds, especially the circumvallate papillae, and would appreciate any information you can give me as to etiology, treatment and prognosis. She has recently had symptoms of excess gastric acidity, which responded to alkalization, but says she feels as if she were swallowing "carpet tacks," and continually rubs the tongue against the roof of the mouth. Kindly omit name.

M.D., Florida.

ANSWER.—Abnormal subjective gustatory sensations occur as the result of varied pathologic processes. They are present in: 1. Local diseases of the tongue and buccal cavity, as may occur with acute and chronic inflammations, chemical or physical agents, and trauma. 2. Disturbances of the sensory pathways in the chorda tympani branch of the facial nerve and in the glossopharyngeal nerves either in the basal ganglions or along the nerve fibers. 3. Acute infectious diseases, tuberculosis, syphilis, cancer, and cachectic states arising in other general diseases, including anemias, avitaminosis and internal secretory disturbances. 4. Diseases anywhere along the gastro-intestinal tract. 5. Mental disorders, particularly hysteria. A description of the buccal cavity and tongue is essential for a proper direct reply to our correspondent. The treatment includes oral hygiene, antiseptic and astringent washes, local application of escharotics, and general measures inclusive of antisyphilitic treatment. The prognosis in most instances is good. In such conditions as leukoplakia buccalis, Moeller's glossitis, glossodynia exfoliativa, xerostomia and malignancy, the prognosis is poor.

ARGYRIA FROM USE OF SILVER NITRATE

To the Editor:—Is there a possibility of bringing on argyria by using a 1:500 aqueous solution of silver nitrate as an injection into the bladder? This injection is to be retained as long as possible, and I have been using it for several months, and it may have to be continued for some time longer, provided there is no danger from argyria.

M.D., Iowa.

ANSWER.—Whether the patient would develop argyria from the use of a 1:500 aqueous solution of silver nitrate as an injection into the bladder would depend, in part, on the frequency with which these injections are made. If they are made once or twice a week, there is probably not much danger. However, if they are made every day, there would be some element of danger. It is difficult to understand why the physician would want to use this solution for several months more after using it for several months in the past.

CITY LICENSING OF PHYSICIANS

To the Editor:—Is it constitutional or within the law for certain cities in certain states to charge the physician varying amounts for a so-called business license in order to permit him to practice medicine within the city limits of such a town or village? In other words, if a physician is duly licensed to practice medicine and surgery in a state, does that not give him a permit to practice in any city or town within that state without further license being required by such an incoporated town or village? In California a neat sum is paid to the state for a license, then there is an annual registration fee payable to the board of medical examiners, and then the city or town requires a license annually to permit practice within such city limits at a cost of $20 or thereabouts per annum. That puts a physician in a class with the hardware merchants, grocerymen, butchers, clothiers, etc., from which individuals, however, a state license is not required so far as I know. The city licensing system appears to be a financial proposition rather than a matter of regulation. To me this arrangement seems unconstitutional, unfair, and at least to some extent humiliating to the profession. Will you kindly advise me as to the legality of this matter, and, if illegal, what steps might be taken to have such practices or methods altered or abolished? Kindly omit my name.

M.D., California.

ANSWER.—Whether a city or town can impose a tax on the exercise of a right conferred by the state depends on the nature and extent of the authority granted by the state to that city or town. In California, any portion of a county containing not less than 500 inhabitants may become incorporated under the provisions of the Municipal Corporation Act (General Laws of California, Deering, 1923, Act 5233), and every city so incorporated seems to have regulatory and taxing power ample to authorize the imposition of an occupational tax on the practice of medicine. Cities of the first class may, for instance, "license and regulate, for purposes of city, or city and county, revenue, all such callings, trades, and employments as the public good may require to be licensed and regulated, and as are not prohibited by law." Cities of the sixth class may "license, for purpose of revenue and regulation, all and every kind of business authorized by law." The right of a city of the sixth class to impose a tax on physicians was definitely upheld in *City of Redding* v. *Dozier*, 206 Pac. 465, decided, Feb. 23, 1922, by the Court of Appeals, Third Division of California. It may be that there are cities in California incorporated otherwise than under the Municipal Corporation Act. If so, the right of the city to impose an occupational tax on physicians would depend on the terms of its charter.

DIET FOR FLATULENCE AND RHEUMATISM

To the Editor:—Thank you heartily for your full and valuable answer in Queries and Minor Notes to my question about treatment for intestinal flatulence (THE JOURNAL, September 10, p. 902). May I ask whether you would change the protein and fat diet and make other modifications in a patient that has also chronic rheumatism and is susceptible to acidosis? I find it difficult in this combination to decide on the best diet. Please omit name.

M.D., Pennsylvania.

ANSWER.—Unfortunately there is no such thing as a diet suitable for chronic rheumatism in view of the fact that this condition may be due to such a variety of different causes. A patient who has gonorrheal "rheumatism" would not be benefited by any special diet, nor would one who suffers from arthritis in consequence of focal infection. On the other hand, a patient with gouty arthritis would improve through dietary restriction, especially by limitation of ingestion of the purine bodies. A patient with diabetes suffers from aches and pains, often called rheumatism, that are relieved by reduction of his blood sugar to near the normal by appropriate low carbohydrate diet.

Acidosis, as occurring in diabetes, excessive emesis, or starvation, is due to incomplete combustion of fatty acids as a result of carbohydrate deficiency. Introduction of an adequate amount of carbohydrate; and, in cases of diabetes, administration of insulin if required for its metabolism, will take care of this kind of acidosis.

SIOMINE AND DI-CITURIN IN HYPERTENSION

To the Editor:—Will you give your opinion as to value of siomine and dicitupine in hypertension associated with arteriosclerosis? Also let me know whether any clinical reports as to the value of these two products have been issued. Kindly omit name.

M.D., New York.

ANSWER.—"Dicitupine" is, perhaps, intended for "Di-Citurin." On an advertising circular, this product is said to be "Mono Potassium Diacetyl Citrate" and claims are made for its action that by no stretch of even a lively imagination could seem to be inherent in a substance of such composition. The report of thirty cases of hypertension given in the advertising literature is far from being sufficiently detailed or extensive to be convincing. In vain one looks for Di-Citurin among the agents described in New and Nonofficial Remedies. This in itself may be taken to mean that it is unacceptable to the Council on Pharmacy and Chemistry, or that it had not yet been submitted to or passed on by the Council. In either case it is well for the physician to refrain from using it, until it has been passed by the Council. It is only by means of this kind of cooperation by the rank and file of the medical profession with the Council on Pharmacy and Chemistry that the polluted stream of proprietary medication can possibly be diverted through the purifying channel of the Council.

"Siomine" is an agent of a different order. It is a definite chemical compound, described in New and Nonofficial Remedies. Its action is that of the iodides, from which it differs in that it can be given in solid dosage form. Though no extensive clinical study has been reported, the manufacturers of the product (Pitman-Moore Company, Indianapolis) have a sufficient number of clinical reports on file to make it fairly evident that one might expect the same effect from siomine that one might secure from any other iodide in hypertension associated with arteriosclerosis.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Memphis, Nov. 14. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

ARKANSAS: Little Rock, Nov. 8-9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville; Sec., Eclec. Bd., Dr. C. E. Laws, Ft. Smith.

CONNECTICUT: Hartford, Nov. 8-9. Sec. Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Sec., Homeopathic Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, Dec. 13-15. Sec., Reg. Bd., Dr. Henry W. Briggs, Wilmington. Sec., Homeo. Bd., Dr. Henry W. Briggs.

FLORIDA: Winter Haven, Nov. 14-15. Sec., Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

KENTUCKY: Louisville, Dec. 6. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MAINE: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, Dec. 13-16. Sec., Dr. Henry M. Fitzhugh, Baltimore. Sec., Homeo. Bd., Dr. J. S. Garrison, Baltimore.

MASSACHUSETTS: Boston, Nov. 8-10. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

NEBRASKA: Lincoln, Oct. 31-Nov. 2. Sec., Mr. Lincoln Frost, Lincoln.

NEVADA: Carson City, Nov. 7. Sec., Dr. Edward E. Hamer, Carson City.

NORTH CAROLINA: Greensboro, Dec. 1. Sec., Dr. John W. MacConnell, Davidson.

OHIO: Columbus, Dec. 7-9. Sec., Dr. H. M. Platter, Columbus.

SOUTH CAROLINA: Columbia, Nov. 8. Sec., Dr. A. Earle Boozer, 505 Saluda Ave, Columbia.

TEXAS: Fort Worth, Nov. 15-17. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas.

VIRGINIA: Richmond, Dec. 6-9. Sec., Dr. J. W. Preston, Roanoke.

WEST VIRGINIA: Morgantown, Nov. 22. Sec., Dr. W. T. Henshaw, New Capitol Bldg., Charleston.

WISCONSIN: Milwaukee, Dec. 17. Sec., Basic Science Bd., Prof. M. F. Guyer, Madison.

Indiana June Examination

Dr. E. M. Shanklin, secretary, Indiana State Board of Medical Registration and Examination, reports the written examination at Indianapolis, June 21-23, 1927. It covered 15 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 100 candidates, 98 passed and 2 failed. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1926)	88.8; (1927) 87.9
University of Illinois College of Medicine	(1926)*	85.5
Indiana University School of Medicine	(1926)	81.5, 88.8, (1926) 89.4, 90.3, (1927) 83.6, 83.7, 85, 85.3, 85.3, 85.6, 86.2, 86.4, 86.5, 86.5, 86.6, 86.6, 86.6, 86.6, 86.7, 86.7, 86.7, 86.7, 86.8, 86.8, 86.9, 87, 87.1, 87.2, 87.2, 87.2, 87.3, 87.4, 87.5, 87.5, 87.5, 87.5, 87.6, 87.6, 87.7, 87.7, 87.8, 87.9, 87.9, 88.1, 88.2, 88.3, 88.3, 88.3, 88.4, 88.4, 88.7, 88.7, 88.8, 88.8, 88.9, 88.9, 89, 89, 89.1, 89.3, 89.4, 89.6, 89.7, 89.8, 90, 90, 90, 90.1, 90.1, 90.1, 90.2, 90.2, 90.4, 90.7, 90.7, 90.9, 91, 91.1, 91.2, 91.3, 91.4, 91.6, 92, 92.3, 94.6
University of Louisville School of Medicine	(1927)	87.1, 88.2, 88.9
Johns Hopkins University School of Medicine	(1925)	94.4
Harvard University Medical School	(1925)	91.4
Tufts College Medical School	(1926)	87.8
University of Michigan Medical School	(1926)	89.2
St. Louis University School of Medicine	(1927)	87.1
Eclectic Medical College, Cincinnati	(1927)	90, 90.3

FAILED	Year Grad.	Per Cent
University of Würzburg, Germany	(1925)†	63.8
National University, Athens, Greece	(1923)	42.5

* This candidate has finished his medical course and will receive his M.D. degree on completion of one year's internship in a hospital.

† Credentials presented apparently false.

Arkansas May Examination

Dr. James W. Walker, secretary of the Arkansas Board of Medical Examiners, reports the written examination held at Little Rock, May 10-11, 1927. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Of the 44 students examined, 43 passed and 1 failed. The following colleges were represented:

PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine	(1925)	86.4, 86.8, (1927) 80.7, 81, 81.2, 81.3, 82, 82.1, 82.5, 82.9, 82.9, 83, 83.1, 83.1, 83.2, 83.4, 83.5, 83.9, 84, 84.2, 84.2, 84.3, 84.3, 84.4, 84.4, 84.7, 84.9, 85, 85.2, 85.4, 85.4, 86, 86.8, 87.2, 87.4, 87.8, 88, 89.2, 89.3
University of Tennessee College of Medicine	(1927)	85.9, 87.2, 87.5
Vanderbilt University School of Medicine	(1901)	81.6

FAILED	Year Grad.	Per Cent
College of Physicians and Surgeons, Little Rock	(1910)	*

* No grade given.

Book Notices

X-RAYS PAST AND PRESENT. By V. E. Pullin, Director Radiological Research, Research Department, Woolwich, and W. J. Wiltshire, Research Department, Woolwich. Cloth. Price, $4.50. Pp. 229, with 43 illustrations. New York: Van Nostrand Company, 1927.

This is a most interesting work on the roentgen ray aside from its medical application. The first part is devoted to the early developments in physics of the theories of light, energy and roentgen rays. The authors later discuss the advances made in chemistry in studying the atom, the electron and crystal structure by means of roentgen rays. The discussion on early equipment and tubes is so complete as to remove the necessity of any future writer on clinical roentgenology devoting half the book to this subject. The authors further explain the industrial applications of the roentgen rays. They also point out the possibilities of further advancement and applications, clinically and industrially. The book is recommended to all students, radiologists, manufacturers and engineers who are interested in the roentgen ray.

CHIRURGIE DE L'OEIL ET DE SES ANNEXES. Par F. Terrien, professeur de clinique ophtalmologique à la Faculté de médecine de Paris. Third edition. Paper. Price, 100 francs. Pp. 646, with 565 illustrations. Paris: Masson & Cie, 1927.

This is the second ophthalmic surgery (it must be considered as a new book because of the complete revision) that has appeared in the French language within a comparatively short time. It is somewhat more voluminous and complete, but lacks the refinement of the book-maker's art and the nicety of illustration that characterized the other. The French and English surgeries of recent publication evidently represent the experience of the individual authors and make no attempt to cover all phases of the subject thoroughly. In consequence, as reference works all fall far behind the Elschnig surgery that appeared as a volume of the Graefe-Saemisch Handbuch. Terrien's book is excellent in spots, notably the parts that deal with sclerotomy and sclerectomy, with certain phases of cataract extraction, with surgery of the conjunctiva, and with lid operations. His experiences with keratoplasty seem to have been limited and unsatisfactory. Cyclodialysis is given short shrift; but why should five pages be devoted to reclination of the lens, which is no longer practiced? A rather noticeable omission is the lack of mention of bacterial examination of the conjunctiva before intraocular operation. The chapter on extrinsic muscle surgery is well written and clear, as is that on surgery of the tear sac, in which conservatism is the prevailing note. It may interest rhinologists to note that surgery of the accessory nasal sinuses is expounded in detail in nine pages. Taken as a whole, the book evidently represents the author's views and experiences, expressed in a clear, succinct manner. The photographic illustrations are miserable, but the semischematic hand-drawn pictures are good and really illustrate. The paper and printing are fair, and the never to be sufficiently execrated paper cover is present.

FUNDAMENTALS OF THE ART OF SURGERY. By John H. Watson, M.B.B.S., F.R.C.S., Surgeon to the Victoria Hospital, Burnley. Cloth. Price, $6. Pp. 349, with 65 illustrations. New York: Paul B. Hoeber, Inc., 1927.

This is a clear and readable volume designed to furnish a more or less general outline of the principles underlying surgical practice. It is written especially for young men who are commencing a surgical career: house surgeons, and particularly young surgeons beginning their work in provincial towns, to whom it is dedicated. In keeping with its purpose, the first chapters are well written essays on surgical art, efficiency and judgment, and abound in common sense admonitions to the beginner. Each chapter is appropriately introduced, in true oslerian style, by various stimulating quotations, ranging in time from the Old Testament to those of the present day. There are numerous illustrations and a comprehensive index. The volume abounds with references to the work of American clinics, and is aware of the advances made by American surgeons. Possibly more might be said

of the preoperative use of compound solution of iodine in the treatment of exophthalmic goiter; however, throughout Europe this is not well understood. Too, the book aims and succeeds at making clear basic principles, rather than special applications. The value of a knowledge of physiology as well as anatomy is emphasized. The chapter on surgical incisions is illustrated by numerous anatomic figures accompanied by clear and concise description. An attempt is made to give the incision which "respects anatomy, gives wide access and saves time." The author has produced a book which should appeal to those commencing their work in surgery.

WEITERE FORTSCHRITTE DER STERILITÄTSBEHANDLUNG. Von Hugo Sellheim, o. Professor und Direktor der Universitäts-Frauenklinik in Leipzig. Heft 1.—Abhandlungen aus der Geburtshülfe und Gynäkologie und ihren Grenzgebieten. Herausgegeben von A. Martin und anderen. Paper. Pp. 36, with 21 illustrations. Berlin: S. Karger, 1927.

The *Monatsschrift für Geburtshülfe und Gynäkologie*, because of the limited size of each volume, has in the past done one of three things with certain long articles. The articles were either not accepted for publication, they were printed in special supplementary volumes, or they were published in two or more numbers of the regular volumes. A new policy has now been begun, these long articles being printed as special monographs under the general heading of "Abhandlungen aus der Geburtshülfe, Gynäkologie und ihren Grenzgebieten: Beihefte zur *Monatsschrift für Geburtshülfe und Gynäkologie.*" Sellheim's monograph is the first of the series and deals with the diagnosis and treatment of sterility. The technic of the Rubin test and the use of iodized oil combined with roentgenograms are described. The psychic factor in the treatment of sterility is emphasized. There are also included detailed descriptions with illustrations of the various plastic operations on the fallopian tubes; namely, salpingostomy and tubal resection with reimplantation of the proximal end of the tube into the cornual portion of the uterus. A description is also given of the method of implanting an ovary inside the uterine cavity. The monograph is well written, the type is clear, and the illustrations are abundant and instructive. There is nothing new in the booklet, but the recent advances in the operative treatment of sterility are admirably presented.

INFECTIONS OF THE HAND. By Lionel R. Fifield, F.R.C.S., Surgical Registrar and First Assistant and Demonstrator of Anatomy, London Hospital. Cloth. Price, $3. Pp. 192, with 67 illustrations. New York: Paul B. Hoeber, 1927.

In presenting this little monograph, the author gives due recognition to Kanavel and others whose masterly monographs on the subject preceded his. The book is brief and compact, and is intended as a manual for house surgeons. There is an introductory chapter in anatomy; the remaining chapters cover the acute infections, minor and major, such as paronychia, felon, tendon sheaths, and osteomyelitis. The text is accurate, well written and excellently illustrated. Hand surgery, in general, should not be regarded as minor surgery; badly done, high grade disability often results. This manual is sufficient to give the average junior surgeon a good working knowledge of the surgery of the hand.

DIE UNREGELMÄSSIGE HERZTÄTIGKEIT. Von K. F. Wenckebach und H. Winterberg. 2 Bands (Textband und Tafelband). Cloth. Pp. 635, with 63 illustrations in "Textband" and 184 plates in "Tafelband." Leipsic: Wilhelm Engelmann, 1927.

This cannot be viewed as a mere second edition of the volume of Wenckebach published in 1914. It is essentially a new work, a complete rewriting three times the size of the earlier book. This is due to the fact that the enormous amount of knowledge concerning cardiac irregularities that has accumulated since 1914 had to be included. Also, subjects are here discussed more thoroughly and with fuller consideration of controversial points. The revision has resulted in a certain loss of charm in the reading of the text that was present in the more intimate and informal page when Wenckebach wrote alone. The more comprehensive and encyclopedic character of the volume naturally increases its value as a book of reference. There are discussed the various types of extrasystole, paroxysmal tachycardia, block, flutter, fibrillation, pulsus alternans, and pulsus paradoxus. Ninety pages are devoted to a consideration of the polygraph and the electrocardiograph. Some day such knowledge will be assumed as known or will be sought in books on special technic. Nearly all the illustrations, chiefly of polygrams and electrocardiograms, are contained in a separate volume. In the legend under the notice of the receipt of the book in THE JOURNAL of a few weeks ago the editor wrote: "Complete and authoritative consideration of use of modern methods of study of lesions of the heart." This epitomized judgment is warranted, as is shown by a careful study of the work.

THE CAUSE AND CURE OF SPEECH DISORDERS. A Text Book for Students and Teachers on Stuttering, Stammering and Voice Conditions. By James Sonnett Greene, M.D., Director of the National Hospital for Speech Disorders, and Emile J. Wells, B.A., Supervisor of the National Hospital for Speech Disorders. Cloth. Price, $4.50. Pp. 458, with illustrations. New York: Macmillan Company, 1927.

Being addressed to the general public and yet written from a medical standpoint and assuming to possess authoritative knowledge of its subject, this book cannot well be overlooked by the medical profession. Of the three divisions of its subject, (1) stammering, (2) disorders of articulation, and (3) disturbances of voice, only the first warrants the particular attention of the physician. The educational treatment of articulative disorders (which with gross incorrectness are called "stammering") is given much space and many illustrative examples of sounds and words. About one third of the octavo volume is devoted to the general psychology of stammering, which, not incorrectly, is called "stuttering." "The stutterer is just a regular, common garden variety of neurotic with a stuttering symptom." The analysis of the general psychology of the stutterer is elaborately and ably presented, and is well worth reading by any student of the subject, and certain chapters, such as the one addressed to parents and teachers, are highly valuable as counsel. Detailed study of the peripheral speech disorder of stuttering is conspicuous by its complete absence. Since the disorder results from a fundamental psychologic instability, why discuss this mere peripheral symptom? Also the psychology of childhood is not differentiated from that of later life. Since nearly all stammering begins in early childhood, this also is significant. The author who attempts to explain, or to treat, stammering without attempting courageously to face the extraordinary and as yet unexplained phenomena of the speech disability itself—a disability that is predominantly responsible for the later severe emotional manifestations of the sufferer, so well described by these authors—is evading an as yet unsolved psychophysiologic mystery, a mystery that still remains in spite of such evasion. This failure to attempt to analyze the peripheral speech phenomena of stammering is not inconsistent with the authors' rather conventional, not always accurate, and hardly up-to-date description of the speech function, as well as the but casual mention of the psychology of speech development. The volume is well illustrated and is a fine example of book making.

EXPLORATION CLINIQUE ET DIAGNOSTIC CHIRURGICAL. Par Félix Lejars, professeur de clinique chirurgicale à la Faculté de médecine de Paris. Second edition. Cloth. Price, 120 francs. Pp. 911, with 1094 illustrations. Paris: Masson & Cie, 1927.

The first edition of this book appeared in 1923. The subject matter has been carefully revised but the book has not been materially increased in size; however, 187 new illustrations have been added. The arrangement of the material and the manner of presenting the subject are the same. The book is an exposition of surgical physical examination and an atlas of surgical diagnosis. It presents the subject in a practical manner and is designed particularly for medical students and general practitioners. One of the most valuable features is instruction in special methods of palpation in pathologic conditions in various regions of the body. The author contemplated producing such a work more than twenty years ago and has collected and presents a magnificent atlas of surgical pathology collected from his own cases. He emphasizes the value of inspection, combined with intelligent manual examination. The various maneuvers are illustrated by a large and excellent collection of carefully taken photographs of

patients presenting the conditions discussed. The book is comparable to the work on surgical diagnosis by de Quervain but has the added value of teaching in great detail the exact manner of carrying out the physical examination, showing the author's methods of palpation by means of numerous photographs. These are of great value and really constitute the unique feature of the volume.

ELEMENTS OF SURGICAL DIAGNOSIS. By Sir Alfred Pearce Gould. Revised by Eric Pearce Gould, M.D., M.Ch., F.R.C.S., Assistant-Surgeon to the Middlesex Hospital. Sixth edition. Cloth. Price, $5 net. Pp. 739, with illustrations. New York: Paul B. Hoeber, 1927.

This manual on diagnosis is well known and has gone through six editions since its appearance forty years ago. It is the type of textbook that contains so much information as to make reading difficult. Dealing essentially with the clinical side of diagnosis, the author takes the mechanistic view, correlating pathologic changes with diagnostic signs, which is, of course, good pedagogy. Such a work can in no way be substituted for the usual surgical textbook, but it makes a good reference volume. The entire subject of surgery is covered; there are no illustrations other than a few roentgenograms.

DIE PERIPHERISCHEN LÄHMUNGEN: Diagnostik, Untersuchungstechnik, Prognostik und Therapie. Von Prof. Dr. Toby Cohn. Paper. Price, 18 marks. Pp. 320, with 64 illustrations. Berlin: Urban & Schwarzenberg, 1927.

This book has been developed from the article on "Paralysis of the Peripheral Nerves" in Kraus-Brugsch's System of Special Pathology and Therapy. It is divided into two parts, the first dealing with general and the second with special considerations. In the first part are included methods of examination, etiology, pathology, course, diagnosis and treatment, and in the second is a description of the results of paralysis of special nerves. Although enriched by the observation of 516 cases of war injuries, the material for the most part deals more with types of lesions encountered in civil practice. Considerable space is devoted to the differential diagnosis of lesions of the central nervous system from the peripheral nervous system, perhaps more than is needed. Although the experience of the war pointed out the limitations of electrodiagnosis, many pages are devoted to the older methods of this procedure, whereas the newer methods are dismissed with a definition. Although supplementary motility, dual innervation and sensory overlap are noted, they have too little space devoted to them. Causalgia is barely mentioned. On the other hand, nontraumatic neuritides are comprehensively described, and certain inflammatory extraneural lesions producing pain receive considerable consideration. The chapter on therapy includes a full description of methods of electrotherapy and mechanotherapy, but one is led to believe that their efficiency is greater than experience proves. The special part contains good descriptions of individual nerve lesions, and the paragraphs on etiology are comprehensive. Frequent references to bibliography make the work more valuable. This monograph compares favorably with others on the subject, and it contains much useful information on many states making contact with peripheral nerve lesions.

SURGICAL ANATOMY OF THE HUMAN BODY: Vol. III. Joints of the Lower Extremities, Chest, Thorax, Abdomen, Pelvis, Perineum. By John B. Deaver, M.D., Sc.D., LL.D., Surgeon-In-Chief to the Lankenau Hospital, Philadelphia. Second edition in three volumes. Cloth. Price, $36 per set. Pp. 763, with 159 plates. Philadelphia: P. Blakiston's Son & Company, 1927.

This volume deals with the joints of the lower extremities, chest, thorax, abdomen, pelvis and perineum. As in the first two volumes, anatomy is studied from the regional point of view, which is, of course, that of surgery. A reading of the volume makes it evident that the text is as much one of operative surgery as of anatomy. This is particularly true of the chapters on the abdomen and pelvis, in which the technical steps of operations on the bile tracts, stomach, kidneys and other viscera are described in detail. The text is easily readable. There is the same profusion of excellent dissection plates as are found in the first two volumes. This is really a beautiful piece of work.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

VEREINFACHUNG UND VERBESSERUNG DER WEST-POLYAK'SCHEN ENDONASALEN TRÄNENSACKOPERATION. Von Dr. Karl Kofler, Privatdozenten für Rhinolaryngologie in Wien, und Dr. Josef Urbanek, Assistenten der I. Universitäts-Augenklinik in Wien. Paper. Price, 3.60 marks. Pp. 63, with 12 illustrations. Berlin: S. Karger, 1927.

New technic for operation on tear sac.

DIE RHINOGENEN AKTIONSSTRÖME IM VEGETATIVEN NERVENSYSTEM UND IHRE REGULIERUNG. Von San.-Rat Dr. A. Fröse, Facharzt für Nasen-, Ohren- und Halsleiden in Hannover. Paper. Price, 2.80 marks. Pp. 71, with 3 illustrations. Berlin: S. Karger, 1927.

Influence of nasal stimuli on vegetative nervous system.

HISTORY OF THE INCANDESCENT LAMP. By John W. Howell and Henry Schroeder. Cloth. Pp. 208, with illustrations. Schenectady: Maqua Company, 1927.

Competent information about the basic discovery in the electrical industry.

NOMENCLATURE OF DISEASES, PATHOLOGICAL CONDITIONS AND OPERATIVE PROCEDURES IN USE AT THE PEKING UNION MEDICAL COLLEGE HOSPITAL. Boards. Pp. 219. Peking, 1927.

A useful compilation of medical terms.

GRUNDRISS DER DIÄTETISCHEN THERAPIE INNERER KRANKHEITEN. Von Dr. I. Normand. Paper. Price, 4.80 marks. Pp. 131. Leipsic: Franz Deuticke, 1926.

Tabular compilation of important dietary information.

PASSING THROUGH GERMANY. Edited by Dr. Karl Kiesel. Paper. Pp. 243, with illustrations. Berlin, 1927.

Well illustrated and pleasantly written guidebook.

LEHRBUCH DER PHYSIOLOGISCHEN UND PATHOLOGISCHEN CHEMIE IN 75 VORLESUNGEN FÜR STUDIERENDE, ÄRZTE, BIOLOGEN UND CHEMIKER. Zugleich II. völlig neubearbeitete und erweiterte Auflage der Probleme der physiologischen und pathologischen Chemie. II Band-Stoffwechsellehre. 4 Lieferung: Eiweissstoffwechsel. Von Prof. Dr. Otto Fürth, Vorstand der Abteilung für physiologische Chemie im physiologischen Institute der Wiener Universität. Paper. Price, 15 marks. Pp. 148. Leipsic: F. C. W. Vogel, 1927.

REPORT OF AN INVESTIGATION OF THE POLLUTION OF LAKE MICHIGAN IN THE VICINITY OF SOUTH CHICAGO AND THE CALUMET AND INDIANA HARBORS, 1924-1925. By H. R. Crohurst, Sanitary Engineer and M. V. Veldee. Prepared by direction of the Surgeon General. Public Health Bulletin no. 170. U. S. Public Health Service. Paper. Pp. 134. Washington: Government Printing Office, 1927.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE, MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann und anderen. Band VII. 1 Hälfte. Blutzirkulation. 1 Teil. Herz. Von L. Asher, A. Bethe, und anderen. Paper. Price, 69 marks. Pp. 862, with 200 illustrations. Berlin: Julius Springer, 1926.

CURIETERAPIA. Basi fisiche e biologiche applicazioni. Indirizzi e metodi della scuola francese. Por Dott. Carlo Pedrazzi, gia assistente volontario presso il "Centro per la lotta contro il cancro" dell' Ospedale Tènon di Parigi. Paper. Price, 35 lire. Pp. 289, with illustrations. Bologna: Licinio Cappelli, 1927.

PERMEABILITÄTSSTUDIEN an einer überlebenden Membran. Von Priv.-Doz. Dr. Ernst Wertheimer. Neue Folge. Heft 2. Fortschritte der naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden. Paper. Price, 2.40 marks. Pp. 25. Berlin: Urban & Schwarzenberg, 1927.

THE TSUTSUGAMUSHI DISEASE IN THE FEDERATED MALAY STATES. By William Fletcher, M.D., M.R.C.P., and J. W. Field, M.B., Ch.B. Institute for Medical Research, Kuala Lumpur. Bulletin No. 1 of 1927. Paper. Pp. 26, with illustrations. London: John Bale, Sons & Danielsson, Ltd., 1927.

SAN FRANCISCO CANCER SURVEY. Fourth Preliminary Report. By Frederick L. Hoffman, LL.D., Consulting Statistician, Prudential Insurance Company. Paper. Pp. 228. Newark: Prudential Insurance Company of America, 1927.

Miscellany

REPORT OF CANCER COMMITTEE OF WAYNE COUNTY MEDICAL SOCIETY ON FURTHER EXPERIENCES WITH PUBLICITY IN CANCER*

HARRY C. SALTZSTEIN, M.D.
DETROIT

For four years there has been conducted in Detroit each year an annual cancer week campaign. Following a few weeks of educational publicity in the newspapers, every hospital in the city examined all persons who applied suspecting they had cancer. The idea was stressed that the examinations were only for those who suspected they had cancer—they were not general medical tests; and to make the campaign a success, some knowledge of the early signs of cancer must be obtained by all.

Last year (January, 1926) 2,345 persons were examined at eleven hospitals. Approximately ninety-four definite cancers and 283 doubtful cancers or precancerous conditions were discovered.[1]

The campaign was repeated again this year (February, 1927). For purposes of comparison the conditions were as nearly like those of last year as possible. The publicity was of a similar nature. Following three or four weeks of informative articles about cancer in the daily press and a day of addresses by a guest speaker, Dr. Robert B. Greenough of Boston, the same hospitals examined all persons who applied suspecting they had cancer. The examinations were given for five days, the same length of time as last year. In many clinics, the groups of examiners were the same.

The conditions, therefore, were quite comparable. The total number of persons examined was almost identical: 2,345 in 1926, 2,292 in 1927. This was the capacity of many of the hospital outpatient departments, for not many more could have been examined in five days. The results accordingly can be viewed in the light of two parallel experiments, conducted under similarly controlled conditions.

TABLE 1.—*Conditions Found at Various Hospitals*

Hospital	Total	Admitted	Cancer and Precancer*		Per Cent	
	1927	1926	1927	1923	1927	1926
Deaconess	148	158	25	27	16.9	17.0
Delray	62	62	12	11	19.4	17.7
Ford	455	633	86	110	19.0	17.2
Grace	221	187	25	27	11.3	14.5
Harper	601	468	117	68	20.0	14.5
Highland Park	177	176	36	38	20.3	21.6
Providence	199	202	40	45	20.1	22.3
Receiving	130	96	14	17	10.8	17.7
St. Joseph's	105	77	10	17	9.5	22.1
St. Mary's	134	129	16	26	11.9	20.2
Woman's	29	54	3	9	10.3	16.6
North End Clinic	31	...	4	..	13.0	....
Total	2,292	2,345	388	395		
Mean					16.9	16.8

* Includes all conditions listed in table 2.

Several comparisons can be noted:

In 1926 there were 831 column inches (four and one-half full pages) of information about cancer and the campaign printed in the three Detroit daily papers. In 1927 there were 535½ column inches, three full pages. There must be something novel and dramatic about a topic to make it news, and the yearly repetition must lose somewhat in originality. However, as busy metropolitan newspapers go, this is considerable.

Table 1 shows that the percentage of conditions found at different hospitals is quite similar: from 15 to 20 per cent of all examined at different institutions show cancer or precancerous conditions. This year's experience is identical with that of last year, the mean or average percentage being 16.9 in 1927 and 16.8 in 1926.

Table 2 exhibits a comparison of the conditions discovered in 1926 and in 1927. The figures are strikingly similar. This year, through a careful follow up conducted by the department of health, as many of the positive and doubtful cases were reexamined as possible, and this year's figures are more accurate on that account. The 1926 clinics discovered ninety-four previously unsuspected or improperly treated cancers; the 1927 clinics discovered 101 cancers. The 1926 clinics discovered 282 allied precancerous tumors, irritations, doubtful cancers, etc.; the 1927 clinics discovered 287. In 1926 there were ninety breast tumors demanding removal; in 1927 there were eighty-one. Each year the greatest number of cancers discovered was in the body regions of skin and breast; each year there was a large group of precancerous mouth conditions; each year a moderate number of cancers of the mouth, lip and uterus were discovered, and each year very few malignancies of the alimentary tract were apprehended. These figures are sufficient to prove that, following any effort of this sort, persons with previously undiscovered or unsuspected cancers will report to a physician or clinic, and that if the effort is repeated after an interval, the same response will be obtained. There is apparently the same amount of latent cancer in the community in any period.

TABLE 2.—*Comparison of Results of Examinations at Detroit Hospitals for Cancer During Cancer Week, 1926 and 1927*

Total examined: 1926, 2,345; 1927, 2,292

	Cancer		Doubtful and Precancerous Conditions		Total	Total
	1927	1926	1927	1926	1927	1926
Skin cancer	43	47				
Doubtful skin cancer	..	..	1	0		
Moles	..	..	51	54		
Senile keratosis	..	..	30			
Irritated warts, miscellaneous tumors of skin (not including sebaceous cysts or simple warts)	..	..	35	67	160	168
Breast cancer	29	18				
Doubtful breast cancer	..	..	7	11		
Benign tumors of breast	..	..	45	61	81	90
Cancer of lip	11	9				
Doubtful cancer of lip	..	..	2	6		
Irritation from teeth, fissures, etc.	..	..	15	6		
Benign tumor of lip	..	..	22	10	50	31
Mouth cancer	4	1				
Doubtful mouth cancer	..	..	1	6		
Irritation from broken teeth, plates, etc., leukoplakia	..	..	38	33		
Chronic irritation of tongue	..	..	24	12	67	52
Carcinoma of uterus and vulva	6	14				
Suspicious bleeding	..	..	7	15	13	29
Stomach cancer	3	3				
Very suspicious indigestion	..	..	7	0	9	3
Rectal and colon cancer	0	2				
Suspicious cases	..	..	2	0	2	2
Carcinoma of bladder and prostate	2	0				
Hematuria	..	..	0	1	2	1
Mixed tumor of parotid	1					
Cancer of esophagus	1					
Fibrosarcoma of finger	1	..	..	..	3	0
Total	101	94	287	282	388	376

Only previously unsuspected or untreated cancers are included. Cases advanced to hopelessness or already under adequate treatment were not counted as having been discovered in the clinic.

* The committee consisted of Dr. George Van Amber Brown, chairman; Dr. Harry C. Saltzstein, secretary; Dr. William A. Evans, Dr. Charles Dutchess, Dr. H. L. Ulbrich and Dr. W. D. Barrett. The 1926 and 1927 campaigns were financed by the Wayne County Medical Society. Approximately $300 was expended each year.

1. Saltzstein, H. C.: The Practical Value of Newspaper Publicity in the Control of Cancer, J. A. M. A. 87: 347-349 (July 31) 1926.

Certain general impressions obtained by several physicians who examined these persons in consecutive years indicated that a cumulative effect of four publicity campaigns was noticeable. The patients were much less alarmed than in previous years —they came more often just intelligently to find out rather than through fear, and there was more knowledge of the early signs of cancer displayed by the applicants. They came more often thinking they had a lump in the breast than for vague soreness; more often for irregular bleeding than irrelevant discomfort in the pelvis. This did not show in the final tabulations, but nevertheless was the independent impression of several examiners.

The process of popular education is slow. Every adult is a potential suspect and therefore must be reached. Newspapers cannot be used indefinitely and other means must be employed, for the education must be periodically repeated. However, all of this is possible, for these figures prove, if any additional proof is needed, that people will listen and can be instructed.

THE PROBLEM OF TREATMENT

There is another phase to the problem. These campaigns have shown very acutely the need for better organization and more facilities for the diagnosis and treatment of cancer in the early stages of the disease. The publicity states that from 60 to 80 per cent of the breast cancers and 40 per cent of cervix cancers can be cured, and that stomach cancer can be radically operated on with a low mortality. Such figures are obtained from highly organized medical institutions commanding exceptional skill. On the other hand, the average person has access to only the average—not necessarily the best—procedures practiced in the community in which he lives.

Naturally there will always be a difference between the average individualized effort and the best possible treatment obtainable, but in a disease which, when left alone, is invariably fatal, and in which the first treatment so often determines the entire outcome, some concern should be felt that the average treatment approaches as nearly as possible the best that can be obtained.

An exhibit was made of the treatment of carcinoma of the stomach in Detroit, as an average community, and then a rough comparison was attempted with the figures reported from the Mayo Clinic, taken as a type of the best highly organized institution.

TABLE 3.—*Gastric Resection for Carcinoma in Detroit*

Results of questionnaire to all Detroit hospitals (includes all cases treated in 1925 and 1926 at: Delray, Deaconess, Ford, Grace, Harper, Highland Park, Providence, Receiving, St. Joseph's, St. Mary's and Woman's hospitals. Patients treated in University Hospital, Ann Arbor, who gave Detroit as their residence, are also included).

		Per Cent
Total deaths from gastric carcinoma in Detroit, 1925-1926 (from Detroit City Health Dept.; includes Highland Park and Hamtramck)	761	
Total admitted to all hospitals	312	41.0
Total operated on	130	17.0
Total resections	28	3.7
Mortality resection, 46 per cent		
Total operative recoveries	15	2.0

On the basis that 761 deaths represent at least that many new cases (that is a low estimate, for each year the health department statistics for all cancer deaths have shown increases), in just 2 per cent was there the chance of cure which operative recovery represents.

There were 761 deaths from gastric carcinoma in Detroit during the last two years (1925 and 1926), and in the same two years a questionnaire sent to all the hospitals in Detroit showed that only fifteen persons (2 per cent of the foregoing figure) survived the radical resection for carcinoma of the stomach (table 3).

When one considers the large group (35 per cent of all carcinomas) which gastric cancer represents, this 2 per cent operative recoveries is a hopeless figure and can well account for the popular and professional pessimism with which stomach cancer is almost universally regarded.

Its exact significance is not clear—many persons with gastric carcinoma go to the terminal stages without consulting a physician; many have associated terminal (cardiovascular, for example) conditions; many refuse operation, so that how many might have had a chance of cure is not known. On this point further analysis is in progress. However, it is becoming recognized that the diagnosis of gastric cancer can be made early in a large percentage of cases.[2] (An English authority states that 60 per cent of cases can be diagnosed early enough for radical removal.)

TABLE 4.—*Comparison of Average Treatment of Gastric Carcinoma in Detroit With That Obtained at Mayo Clinic*

	Operability		Mortality		
			Detroit		Mayo Clinic
	Detroit, 1925-1926	Mayo Clinic 1926*	No.	%	%
Total number admitted to all hospitals in Detroit..	312				
Total number operated on	130, 41% of total admissions	266, 50% of total admissions	48	37	7.16
Total number explored only	44, 24% of total operations	98, 37% of total operations	11	10	2.04
Total number gastro-enterostomies	58, 44% of total operations	48, 18.4% of total operations	24	41	12.5
Total number gastric resections	28, 21.5% of total operations	120, 44% of total operations	13	46	7.60

* Balfour: Personal communication.

When a comparison is attempted between this average treatment and that reported from a highly organized clinic—the Mayo Clinic as a type—the results presented in table 4 are obtained.

Of the total admitted to hospitals, the percentage operated on is not dissimilar: 50 per cent at the Mayo Clinic, 41 per cent in Detroit. But there were proportionally just twice as many (41 per cent) radical resections in Rochester as in Detroit (21 per cent), and the mortality in the highly organized clinic is 7.5 per cent, while the average mortality as revealed by this questionnaire is still 46 per cent.[3] There may be some objection to direct comparison of these figures. Persons with cancers in the more advanced stages are more apt to remain in their own community; hence the local figures show at a disadvantage; but in this stage "cures" in gastric cancers are scarcely obtained —even operative recoveries are relatively infrequent, and the fact remains that while fifteen persons recovered from gastric resections for carcinoma in Detroit in two years, 111 recovered at Rochester in one year.

The possibilities of treatment for cancer, given the earliest opportunities and the best possible auspices, are not generally appreciated. Table 5 gives a few of the published results, purposely chosen as among the highest percentages of cures on record. Lockhart-Mummery reports 73.7 per cent of five year cures in early rectal carcinomas. The recent British ministry of health report quoted in the table contains the statement that "at the end of ten years from operation upon a growth definitely proved to be malignant (axilla not involved), the number of survivors is within 14 per cent of that provided by a general population table."

The foregoing is far from the pessimistic picture ordinarily held by physician and patient, but it is also far from what the average physician or patient sees about him. Of course, it is

2. Eusterman, G. B., and Bueermann, W. H.: Carcinoma of Stomach: Present Status of Diagnosis and Prognosis, J. A. M. A. 88:295 (Jan. 29) 1927.

3. Incidentally, in this table the mortality from gastro-enterostomy (41 per cent) approaches quite closely that from gastric resection—a fact recently noted by Balfour and others.

impossible to duplicate everywhere the results of specialized centers or outstanding individuals who have devoted a lifetime to the perfection of technic in certain body regions; but efforts toward grouping of cancer patients so that the requisite skill can be developed and made more accessible to the entire community does not involve new facts and is only a problem in medical organization. Probably nothing in the entire cancer situation would be productive of as much benefit as such efforts. Wider utilization of existing knowledge means full utilization of the best treatment extant as well as wide dissemination of clinical facts about the disease.

The same idea was expressed at the Mohonk Conference by Louis I. Dublin:[4]

"Particularly should the attitude of the medical and public health professions toward the disease be revised. . . . Where we have a few hundred physicians trained to recognize and treat cancerous states we need thousands. The recognized facilities for the care and treatment of hopeful cases are pitiably inadequate and unorganized."

DIAGNOSIS

Another fact the "cancer week" clinics demonstrated was the need for better diagnostic facilities for suspected cancer patients. The outpatient departments of the various hospitals can be taken as a cross-section of the average, or better than the average, medical practice in the community. The following case was seen in three surgical outpatient departments, twice directly as the result of cancer week publicity. Though the first examination recorded retraction of the nipple, the diagnosis of carcinoma was not made until a fourth examination two years later, at which time there was supraclavicular extension and hopelessness:

CASE 1.—Mrs. B. P., aged 46, was admitted, July 21, 1925, to A— Clinic Surgical Department. The following note is recorded: "Complains of pain in left breast, and has noticed a small lump two weeks ago above the nipple, also a lump in lower portion of left axilla. Examination—nothing definite felt in breast. Nipple is slightly retracted. Hard mass felt in lower portion of axilla 1 inch diameter in region of subpectoral glands. Return in two weeks." The patient did not return.

We have the following records of her having been seen one and two years later, during the cancer week examinations:

Admission, Jan. 26, 1926, B— Hospital (cancer week examinations). "She noticed a lump in left breast about one year ago. No pain nor has the lump grown larger. Examination: small lump in left breast cystic in character. Diagnosis cystic mastitis."

Admission, February, 1927, A— Clinic (cancer week examinations). "Two years ago noticed lump at nipple with retraction. Not growing larger in two years. Examination: retraction of left nipple. Small mass around nipple; no adenitis. Diagnosis: mastitis. Possible early carcinoma."

The department of health follow-up examination two weeks later revealed: "Far advanced carcinoma of breast with axillary and supraclavicular metastases. Saw surgeon in Ann Arbor last week, who pronounced the case too advanced for operation. Patient is now taking serum treatments. She states that the above examinations constitute the only medical advice she had for this condition during these two years."

Mouth cases especially showed many errors. Two of the four mouth cancers recorded in the 1927 cancer week cases (table 2) were diagnosed leukoplakia at the hospital clinics, and diagnosis later revised through the department of health follow-up.[5] Many leukoplakias, etc., were diagnosed cancer. Bloodgood[6] has commented on the fact that "so few surgeons have seen carcinoma of the tongue and mucous membrane of the mouth in this early stage."

It is one of the principles of publicity that "the service must be forthcoming for the demand which has been created." The demand is for the diagnosis of early lesions; the service therefore must be given while the lesion is still quite small—the prehospital stage, as conditions are today. Health departments faced a similar situation in the control of infectious disease—the difficulties of early diagnosis and the physician's uncertainty in many cases unless he had had opportunity for very wide acquaintance with these diseases. They have attempted a solution, and with good results, by offering the medical profession the services of a trained diagnostician, available always, and free of cost.

Of course, the difference is that in infectious diseases the diagnosis must be made within a few hours, while in suspected cancer there is more leisure. But cancer can be considered an emergency of only a few weeks, and similar principles be applicable. Something of this nature might be workable; it does not destroy the bond between physician and patient which the free outpatient department does, and does not carry the apprehensive idea which a surgical consultation for the diagnosis of cancer implies.

TABLE 5.—*Some of the Reported Possibilities of Treatment in Early Carcinoma*

Body Region	"Cures," per Cent	Years	Operation Mortality, per Cent	No. of Cases	Extent of Growth and Treatment	Reference
1. Lip	90.3	5 to 8	..	98	Glands not involved; primary complete operation; local excision of growth, removal of glands draining lip	Mayo Clinic; Sistrunk: Ann. Surg. **73**: 521 (May) 1921
	88	3	0	71	Same conditions and treatment	Massachusetts General Hospital; Shedden: Boston M. & S. J. **196**: 262 (Feb. 17) 1927
2. Breast	85	3	0.8	60	Axilla not yet invaded	Halsted's original series; Johns Hopkins Hosp.: Ann. Surg. **46**: 1 (July) 1907
	95	3	0	61	Axilla not yet invaded; radical Rodman or Halsted operation (deaths from other causes [all carefully traced] are excluded)	Pub. Health Report 34, British Ministry of Health (Leeds) 1926; cases chiefly from Leeds General Infirmary; 13 different surgeons
	92	5	0	58		
	90.9	10	0	39		
3. Stomach	52.5	3	7-10	..	Gastric resections; no glands involved	Mayo Clinic; Balfour: Tr. West. S. A., 1925
	18	3	7-10	..	Gastric resections; glands involved	
4. Rectum	73.7	5	3	73	Favorable small growths not yet invading muscular coat	Lockhart-Mummery: Brit. J. Surg. **14**: 110 (July) 1926
	44.8	..	..	96	Muscular coat involved, growths not unduly fixed, not extensive involvement of glands	
					3% mortality private cases; 14% mortality hospital cases; permanent colostomy; perineal excision; rectosigmoid growths not included	
5. Cervix	57	5	..	24	Early operable; uterus movable, no fixation; radium, radium plus operation	Ward, G. E.: J. A. M. A. **87**: 1607 (Nov. 20) 1926
	87	5	3	..	Incipient cases; radical operation	Weibel: Wien. klin. Wchnschr. **38**: 650 (June 4) 1925
	53	5	3	..	Mild cases; radical operation	

4. Dublin, L. I.: The Chance of Death from Cancer, Surg. Gynec. Obst. **44**: 274 (May, number 5 A) 1927.

5. One has since been radically removed — an early squamous cell carcinoma of the inside of the cheek. The other was also of the inner side of the cheek but already involved the mandible.

6. Bloodgood, J. C.: Biopsy in Diagnosis of Malignancy, South. M. J. **20**: 18 (Jan.) 1927.

Dr. Greenough[7] says:

"No general practitioner can afford to get the reputation of being an alarmist, and he is loathe to subject his patient to the loss of time and to the expense of an unnecessary consultation. The temptation therefore is to adopt the 'wait and see' policy, the most disastrous policy that can be adopted in dealing with cancer in any situation."

The cancer clinics fostered by the Massachusetts State Department of Health are a practical step in this direction, and a recognition of the fact that additions to the average diagnostic service available to the community are desirable. Dr. Hugo A. Freund has suggested making cancer a reportable disease, as a stimulus to earlier recognition. The physicians of Newton, Mass., have recently voluntarily agreed to report all cancer cases.

THE FOLLOW-UP

The third fact easily apparent is the need for better follow-up surveillance of persons suspected of having cancerous conditions or when cancer has been diagnosed. After a diagnosis of gallstones, fibroids, and the like, the patient is generally left to her own inclinations as to how soon—maybe years later—she shall be operated on. The diagnosis of malignancy carries a heavy responsibility in the matter of urging the patient to be treated immediately. No one should diagnose cancer, feeling that his responsibility ends after the diagnosis is made. The significance of even a short delay is not generally appreciated. Leland[8] has shown that in cervix cancer each month's delay carries 16 per cent decrease in the chance of cure: 4 per cent each week.

Social service departments of hospitals should realize the contribution they can make to the entire subject by feeling that, once a diagnosis of cancer is made, that case is their problem until the patient is under proper treatment. The need of immediate treatment for any person given such a diagnosis or the suspicion of such diagnosis in their institution transcends all other considerations, such as financial status, hospital crowding, or disinclination on the part of the patient to return. Case 2 illustrates this:

CASE 2.—At the first examination, a suspicious retraction of the nipple was recorded, and the patient told to report back in two weeks. She did not return, and was lost sight of.

CASE 3.—Mrs. M. M. was admitted to C— dispensary, Dec. 15, 1926. The record stated: "Flowing freely. Examination shows there is a large irregular cervix. . . . To enter hospital at once." Because of overcrowding of hospital beds the patient did not receive treatment until two months later—Feb. 19, 1927. Two months' delay represents 32 per cent less chance of cure.[7]

Each year a few patients with slowly growing cancer were seen who had been told at previous cancer week clinics that they had cancer, but "had not bothered about it" until one, two or more years later. They either did not consider it serious or did not know where to get treatment. In the following case there was four years' delay because of this:

CASE 4.—C. H., a man, went to the cancer week clinic "when the specialist from Baltimore was here"; i. e., in 1923. There was a small epithelioma near the inner canthus of the left eye. He was told he had cancer and sent to the city physician's office for authorization for treatment. He was a drifting type, and the trip there, back to the dispensary, and then another errand was too much—he lost interest. One year ago he "thought of going to Ann Arbor," but didn't. "It seems when a man gets down, he gets discouraged, and when I had a little money, the sore either got better or I didn't know where to get treatment." When seen again, Feb. 18, 1927, during cancer week, there was an ulcer the size of a five cent piece already involving the inner canthus of the left eye.

This follow-up may have to be intensive; it may involve other physicians and delicate situations, for it is a fearful thing at best to be told one has cancer, and few will accept one opinion as final: they drift from adviser to adviser, hoping to be told something more pleasant (as sometimes happens), meanwhile not appreciating the importance of the delay. But once the diagnosis or suspicion of cancer is determined, the institution, the clinic, the physician or some medical personage should feel responsible until that patient is brought under proper treatment. We have seen enough cases in which fatal delay resulted from circumspect advice—not definite—aiming to preserve the patient's equanimity: "The doctor did not tell me it was serious, therefore I did not bother about it," so that we doubt the wisdom of any advice which does not leave the patient definitely informed of the true condition (excepting, of course, hopeless lesions).

"A careful feeling out of the patient's probable reaction to the truth which he must hear is the surest way to transmit evil tidings with the minimum of shock. . . .

"In managing a patient who is blessed with a calm and judicial temper, the mere logical statement of his case will probably elicit the suggestion from him that action be not postponed, and the way is then clear for the next step, which will be consultation with the surgeon.

"On the contrary, a stolid or slow witted person cannot usually be approached in this manner. When it becomes clear that he does not take in the sense of what his adviser is trying to tell him, it may be imperative to use the method of the cudgel instead of logic or persuasion. Such a person will have to be told bluntly that he probably has cancer and that he will die unless an operation is performed.

"Still others are timid and flee from the truth at the first unwelcome hint; or vanity may be the influence which makes for procrastination or for insufficient operation."[9]

These are different ways of imparting just one thing—the true situation.

Finally, there is opportunity for surveillance of persons who have been operated or treated for cancer or other allied conditions:

CASE 5.—Mrs. W. K. L. (courtesy of Dr. L. W. Haynes) was operated on at a nationally known institution in April, 1922. A localized area of chronic cystic mastitis was excised from the right breast, the pathologic report confirming the diagnosis of chronic cystic mastitis. In 1924, a nodule recurred at this site. A carcinoma the size of a walnut was removed locally (in northern Michigan). She presented herself at C— Hospital during the cancer week, in February, 1927. She had not had medical attention for the breast condition except as stated. She now had a hard, fixed mass overlying the second and third ribs in the right mammary region, at the site of the two previous operations, and several palpable glands in the axilla.

Many hospitals maintain a rigid follow-up of cancer cases, and there has undoubtedly been considerable improvement in such matters during the past few years. Perhaps some central bureau, under, say, the department of health, could more easily keep the remainder of such cases under record. The early recurrences in lip, breast or cervix cancer thus discovered would warrant the expense involved.

CONCLUSIONS

1. In two publicity campaigns held in successive years, ninety-four and 101 previously unsuspected cancers, with very few exceptions in stages favorable for treatment, were discovered; 282 and 287 allied irritations, benign tumors, precancerous conditions and growths which could not be positively diagnosed as cancer were discovered.

2. In 1925 and 1926 there were 761 recorded deaths from carcinoma of the stomach in Detroit. During this period there were twenty-eight gastric resections for cancer done in all the hospitals in the city, with fifteen operative recoveries.

7. Greenough, R. B.: The Present Status of Treatment of Cancer of the Breast, Bull. Wayne County M. Soc., March 1, 1927.
8. Leland, quoted by Greenough (footnote 6).
9. Lilienthal, Howard: Relation of the General Practitioner to the Cancer Problem, Surg. Gynec. Obst. 44: 308 (May, number 5 A) 1927.

3. There is need for better organization and more facilities for the diagnosis and treatment of cancer available to the entire community.

(*a*) There must be better grouping for treatment if the possible results of modern cancer treatment are to be more generally obtained.

(*b*) There is need for better diagnostic facilities for suspected cancer patients available to the entire community, and this service must be made workable for patients in the early stages of the disease.

(*c*) There is need for better follow-up surveillance of persons suspected of having cancer or allied conditions or in whom cancer has been diagnosed or these conditions have been treated.

1056 Maccabee Building.

Medicolegal

Death Certificates as Evidence in Oklahoma

(Oklahoma Aid Ass'n v. Thomas (Okla.), 256 Pac. R. 719)

The Supreme Court of Oklahoma holds that the death certificate provided for by chapter 79, article 19, compiled statutes of that state of 1921, under the head of "vital statistics," to be made by the attending physician or coroner, and the statute making it prima facie evidence of the facts therein stated, applies to questions arising under these provisions, so far as they involve public rights and public health, and is the proper exercise of the police power of the legislature, but does not change the statutory and common-law rules of evidence in controversies of private parties growing out of contracts, and a certified copy of a death certificate is not admissible in an action on an insurance policy for the purpose of showing suicide.

Rulings in Malpractice Case Against Drugless Healer

(Corey v. Radabaugh et ux. (Wash.), 255 Pac. R. 1037)

The Supreme Court of Washington says that the complaint alleged that the defendant Radabaugh negligently treated the plaintiff for ulcer of the cornea of the right eye. This defendant was engaged in practicing the system of healing known as drugless therapeutics, holding a license from the state for that purpose. He was also a licensed optometrist, and, while that word was frequently used in the case, it had no controlling or material effect and might be treated as surplusage. In the instructions to the jury the trial court said:

> Ordinary diligence and skill, or a reasonable degree of skill and care, means and requires that the optometrist or drugless healer will bring to the treatment of the patient he is employed to treat such a degree of reasonable care and skill as is possessed and exercised by optometrists or drugless healers in good standing, practicing in the same general locality in the same line of practice, having due regard to the advanced state of practice in such line of science at the time. Such optometrist or drugless healer must not experiment in his treatment of such a patient.

There was no need whatever of speaking of, or cautioning the jury, with reference to experiments in treating the patient, because there was no contention or proof that any such thing had been done or attempted. Another objectionable thing in the instruction was that in speaking of the standard of care and skill to be exercised, namely, that possessed and exercised by drugless healers in good standing practicing in the same general locality in the same line of practice, the court added the words, "having due regard to the advanced state of practice in such line of science at the time." There was in this case no evidence of any advanced state of practice of this kind, and under such circumstances the instruction was wrong.

There are certain things that physicians of another school, such as the allopathic, may testify to in a malpractice case against a drugless healer. This subject is discussed somewhat in *Wilcox* v. *Carroll*, 127 Wash. 1, 219 Pac. 34; but the test or standard that ultimately controls is that stated in the case of *Howatt* v. *Cartwright*, 128 Wash. 343, 222 Pac. 496. Those reasonably skilled practicing in the same neighborhood and in the same line of practice are the ones from whom the proof should come.

For error in the instruction and in the scope of questions asked a witness who was a physician and surgeon, the supreme court, without stating what those questions were, reverses a judgment for damages obtained by the plaintiff and remands the cause with directions to grant a new trial.

A Distinction Relative to Confidence in Opinions

(Colburn v. Kenyon Steel Pump Co. et al. (Minn.), 214 N. W. R. 29)

The Supreme Court of Minnesota, in reversing an order of the industrial commission which disallowed the plaintiff compensation for the disability resulting from a hernia alleged to have been sustained by him while in the employ of the defendant company, says that at about 10 a. m. the plaintiff undertook to remove from a lathe machine a chuck weighing about 75 pounds. It caught somehow. He gave a little jerk, and then placed the device on the floor. As he straightened up, he felt something go wrong in his left groin. Pains shot through his body and grew worse during the afternoon. After he got home he called a physician, and two days later called, in addition, another physician. The plaintiff's theory of the cause of his trouble was supported by the testimony of both physicians. On the other hand, a physician called by the defendant and examined as an expert witness testified, in answer to a hypothetic question, in direct opposition to the testimony of the plaintiff's physicians. His answer to such question covered several pages of closely printed matter, based largely on the weight of the chuck, his experience in lifting similar chucks, and having seen it done many times, the method generally used by others in lifting chucks, and the fact that he had never seen a traumatic hernia from internal strain, pressure or injury. Following this course of reasoning in connection with the history of this case, the witness gave it as his opinion that there was no evidence that the plaintiff had a strangulated hernia or that his trouble was caused by the lifting of the chuck. It was largely on the testimony of this witness that the commission based its decision and refused the plaintiff compensation. But the theory of this witness was based on a hypothetic question which failed to state all the circumstances and from circumstances entirely outside the record. His opinion failed to coincide with the provisions of the workmen's compensation act as construed by this court. This court is of the opinion that the evidence clearly demonstrated that the strain to which the plaintiff was subjected in removing the chuck was the exciting and immediate cause of the rupture complained of, and that the plaintiff was entitled to compensation for the disability resulting therefrom. It is a general rule of evidence that, where witnesses of proper skill and experience have formed their judgment from a personal examination of the subject of the controversy, their opinions are generally more worthy of confidence than those elicited by hypothetic questions which may or may not state all circumstances necessary to form a correct conclusion.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, November 2-4. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American College of Physical Therapy, Chicago, October 31-November 5. Dr. R. W. Fouts, City National Bank Building, Omaha, Secretary.

Ohio Valley Medical Association, Evansville, Ind., November 9-10. Dr. J. F. Wynn, 712 South 4th Street, Evansville, Ind., Secretary.

Philippine Islands Medical Association, Manila, December 14-17. Dr. A. S. Fernando, College of Medicine, University of the Philippines, Manila, Secretary.

Radiological Society of North America, New Orleans, November 28-December 2. Dr. Robert J. May, 5005 Euclid Avenue, Cleveland, Secretary.

Southern Medical Association, Memphis, Tenn., November 14-17. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Surgical Association, Augusta, Ga., December 13-15. Dr. R. L. Payne, Medical Arts Building, Norfolk, Va., Secretary.

Western Surgical Association, Omaha, December 8-9. Dr. Harry P. Ritchie, Lowry Building, St. Paul, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

2: 597-718 (Aug.) 1927

*Hypertension: Classification; Differentiation of Malignant Type. N. M. Keith, Rochester, Minn.—p. 597.
Id.: Signs and Symptoms. W. R. Ohler, Boston.—p. 609.
*Id.: Complications. J. E. Paullin, H. M. Bowcock and R. H. Wood, Atlanta, Ga.—p. 613.
*Cardiac Output. Effect of Caffeine Sodiobenzoate. C. Pilcher, C. P. Wilson and T. R. Harrison, Nashville, Tenn.—p. 618.
*Id.: V. Effect of Epinephrine. C. Pilcher, C. P. Wilson and T. R. Harrison, Nashville, Tenn.—p. 630.
Heart Disease Situation in Cincinnati. J. E. Benjamin, Cincinnati.—p. 637.
Low Voltage in Electrocardiogram. C. T. Burnett and G. F. Piltz, Denver.—p. 649.
*Subacute Bacterial Endocarditis with Vesiculobullous Skin Lesions. D. Davis and D. Ayman, Boston.—p. 671.
*Cardiac Aneurysm Probably of Traumatic Origin. H. Joachim and A. T. Mays, New York.—p. 682.

Malignant Hypertension.—The seriousness of malignant hypertension is shown by the fact that of eighty-one patients reported on by Keith, seventy-three died within fifty-one months. The majority died within two years. Only five lived two years or longer. The average length of life after the diagnosis was made was eight months. In seven cases necropsy was performed; four of these necropsies were fairly complete, including examination of the brain, and in three cases examination of the eye. The most important and constant observation in these cases is the extreme diffuseness of the lesion, not a single organ or tissue escaping. Even the vessels of the gastro-intestinal tract and the skeletal muscles were equally involved. Sometimes the kidneys, the heart or the brain is more severely injured by these lesions than the other organs.

Complications of Hypertension.—A review of the complications occurring in 500 patients seen in consultation and private practice is presented by Paullin et al. The outstanding organ which bears the greatest burden of the advancing attack is the heart, which undergoes a cycle of changes: dilatation and hypertrophy, development of murmurs, cardiosclerosis, angina pectoris, disturbances of rhythm, congestive heart failure and coronary occlusion. Cardiac complications caused 137 of the patients to seek medical advice. Second in importance are the complications referable to the central nervous system: tinnitus, severe vertigo, cerebral crises and apoplectic seizures; these complications caused 121 to seek medical relief. Next in importance are the changes in the vascular system as evidenced by the development of arteriosclerosis, dilatation of the aorta and aneurysm. The foregoing are but links in a chain on which the development of other complications greatly depends. Renal impairment, though not of a severe degree, eventually occurs as a late complication in only a small number of cases. Severe renal disease occurred in a small percentage; however, in these it was probably the primary condition and the hypertension a secondary development.

Effect of Caffeine Sodiobenzoate on Cardiac Output.—The output per minute of the intact hearts of normal unnarcotized and of morphinized dogs, as determined according to the Fick principle, has been studied by Pilcher et al. before and after the intravenous and subcutaneous administration of caffeine sodiobenzoate in doses of 7.5, 15 and 30 mg. per kilogram. After doses comparable to therapeutic doses for human beings (7.5 and 15 mg. per kilogram), the average change in the minute cardiac output was a decrease in both instances of less than 10 per cent. This change was independent of changes in oxygen consumption. Larger doses produced a proportionately greater decrease in the cardiac output per minute. These experiments suggest that caffeine sodiobenzoate in therapeutic doses has no direct beneficial action on the circulation. No significant change was observed in the respiratory rate or depth.

Effect of Epinephrine on Cardiac Output.—Epinephrine, given both intravenously and subcutaneously, has been shown by Pilcher et al. to increase the cardiac output of normal unnarcotized dogs, as determined by the Fick method. The degree of increase after both methods of administration has varied from 10 per cent to 59 per cent. The duration of the effect has been less than seven minutes after intravenous administration, and very variable after subcutaneous administration. One dog showed a decrease in cardiac output on three occasions after being given the drug. It is suggested that epinephrine may be ineffective and possibly dangerous in the treatment of acute circulatory failure.

Vesiculobullous Eruption in Subacute Bacterial Endocarditis.—The skin lesions in subacute bacterial endocarditis recorded by Davis and Ayman are said to be unique. In both cases the original lesions were vesicles over the face, and later, bullous lesions appeared over the extensor surfaces of the upper extremities. Death followed a few days after the eruption of bullae. Neither patient gave a history of rheumatic fever, and at postmortem no evidence of old mitral stenosis was noted. The typical vegetations of subacute bacterial endocarditis were found on mitral and aortic valves in both cases. *Streptococcus viridans* was isolated from the vegetations of one case.

Cardiac Aneurysm of Traumatic Origin.—The case reported by Joachim and Mays was that of a man, aged 25, who had no history, signs or serologic evidences of syphilis, and no valvular lesions, coronary disease or diffuse myocardial changes. There was evidence of interstitial myocarditis near the site of the aneurysm. The aneurysm was not located at or near the apex. The only discoverable etiologic factor was an injury to the chest at the age of 12.

American J. Obstet. & Gynec., St. Louis

14: 137-276 (Aug.) 1927

*Nasal Application of Pituitary Extract for Induction of Labor. J. Hofbauer, J. K. Hoerner and K. S. Oliver, Baltimore.—p. 137.
*Parietal Fontanel in New-Born and in Young Infants. F. L. Adair and R. E. Scammon, Minneapolis.—p. 149.
*Infant's Birth Weight and Mother's Gain During Pregnancy. J. M. Slemons and R. H. Fagan, Los Angeles.—p. 159.
*Liver Extract in Toxemias of Pregnancy. H. A. Miller and D. B. Martinez, Pittsburgh.—p. 165.
*Vaginal Sterilization, With or Without Vaginal Hysterotomy. F. C. Irving, Boston.—p. 170.
Carcinoma of Cervix in Thirteen Year Old Patient. A. Bonner, New York.—p. 175.
*Reactions Following Intravenous Injections of Glucose (Dextrose) Solution. P. Titus and P. Dodds, Pittsburgh.—p. 181.
Ligation of Uterine Arteries for Control of Hemorrhage in Placenta Praevia. W. Kerwin, St. Louis.—p. 189.
Significance of Inflammation of Umbilical Cord. R. S. Siddall, Detroit.—p. 192.
*Pregnancy Following Thyroidectomy. A. C. Williamson, Pittsburgh.—p. 196.
*Value of Sugar Test in Diagnosis of Pregnancy. L. C. Scheffey, Philadelphia.—p. 202.
Case Teaching Method in Gynecology. S. R. Meaker, Boston.—p. 208.
*Cardiac Stimulation by Massage and Epinephrine for Suspended Animation; Case. E. H. Greene, Atlanta, Ga.—p. 213.
*Vaccination of Pregnant Women and New-Born Infants. B. L. Lieberman, Detroit.—p. 217.
*Value of Blood Sedimentation Test in Gynecology. W. L. Benischek and M. D. Douglas, Cleveland.—p. 220.
*Benign Uterine Bleeding. J. V. Meigs, Boston.—p. 225.
Lichen Planus of Semimucous Membranes of Pudendum Muliebre. D. W. Montgomery and G. D. Culver, San Francisco.—p. 232.
*Radium Treatment of Endometrioma of Rectovaginal Septum. A. Heineberg, Philadelphia.—p. 235.
*Benign Giant Cell Tumor of Xanthosarcoma Type. H. Dittrick, Cleveland.—p. 239.
Porro Cesarean Section for Postinflammatory Displacement and Fixation of Cervix. R. A. Wilson, New York.—p. 244.
Annular Detachment of Cervix in Prolonged Labor Due to Generally Contracted Pelvis. L. Dorsett, St. Louis.—p. 247.
Long Standing Granuloma Inguinale. F. W. Rice, Des Moines, Iowa.—p. 249.

Fibromyoma of Vagina. C. B. Ingraham, Denver.—p. 251.
Two Cases of Malignant Neoplasm of Ovary: Treatment by Radiation. A. W. Jacobs, New York.—p. 253.
Septicemia Following Sacral Anesthetic (Procaine). L. S. Hall, Nashville, Tenn.—p. 256.

Induction of Labor by Pituitary Extract.—The technic employed by Hofbauer et al. was as follows: Twenty minims (1.25 cc.) of pituitary extract is inserted under the anterior end of the inferior turbinate. At the end of one hour, or at most two hours, the pledget is withdrawn, and a fresh one applied to the opposite nostril for a similar period of time. The method has been used in fifty-four cases with only a single failure. All the babies were born alive.

Parietal Fontanel in New-Born and Infants.—The relative frequency of interparietal spaces as determined by Adair and Scammon from a study of 598 healthy living children is 30.7 per cent for the first month after birth, 27.8 for the second month, 13.3 per cent for the third month and 18.9 per cent for the entire first year. The relative frequency of interparietal spaces or parietal fontanels of 1 square centimeter or over in area was 5.81 per cent for the first month after birth and 3.33 per cent for the second and third months. The persistence of the parietal fontanel after the first trimester is unusual. Only one instance was found in cases of the second trimester and none thereafter. The average area of the parietal fontanel (in measurable cases) for the first trimester of postnatal life was 0.14 square centimeters in this series. The form of the parietal fontanel is highly variable.

Mother's Diet and Weight of Infant.—The study made by Slemons and Fagan indicates that diet control does not enable one to determine precisely what the size of the fetus should be; but in general it does serve to prevent overgrowth of the fetus. This lessens the hazard of birth injuries both to the mother and to the infant. Additional benefits obviously relate to the prevention of maternal toxemias and also to a more satisfactory restoration of the mother's body to its accustomed weight prior to pregnancy. A 2,000 calory diet was employed.

Liver Extract and Toxemias of Pregnancy.—Experience with liver extract has convinced Miller and Martinez that it has not only a depressor action but in addition a detoxicating property in toxemias of pregnancy. They have used the extract in a series of fifty cases. Seven were cases of eclampsia, and forty-three were cases of preeclamptic toxemia. Cases of known or suspected preconceptional nephritis were only symptomatically improved after liver extract had been used. Convulsions did not occur in any treated preeclamptic cases. Improvement always occurred except in the preconceptional nephritis cases. Only one death occurred in this series, in a case of cardiac decompensation.

Vaginal Sterilization.—In all four cases cited by Irving, sterilization was affected by doubly ligating the tubes and burying their proximal ends in the uterine musculature. The uterus is first emptied by an anterior vaginal hysterotomy.

Reactions Following Intravenous Injections of Dextrose.—Titus and Dodds believe that reactions following intravenous injections of dextrose solution are usually the result of several general faults: (1) The use of impure dextrose; (2) its being dissolved in something other than freshly distilled, uncontaminated water; (3) improper preparation and sterilization of the solution and the apparatus for its administration; (4) the administration of the dextrose too rapidly, too cool, or in too weak a solution.

Pregnancy Following Thyroidectomy.—Williamson advises that no thyroid patient after operation should become pregnant for at least two years, even though her symptoms are alleviated. If a thyroid patient after operation becomes pregnant, she must be treated cautiously with iodine, thyroid substance, sedatives and rest. Metabolism readings should be taken for the accurate estimate of the case. The patient cannot be assured that she will have a normal baby if she is still having symptoms referable to the thyroid.

Sugar Test for Diagnosis of Pregnancy.—Experience with this test leads Scheffey to conclude that the sugar test is not reliable as an accurate diagnostic aid in pregnancy. The test was of no practical value in determining the status of a threatened, incomplete or completed abortion. The larger number of positive results in the nonpregnant patients, less than 70 per cent being negative, further emphasizes the unreliability of the test, particularly since the question of the differential diagnosis from pregnancy arose in a number of instances.

Suspended Animation; Cardiac Massage.—Greene relates a case of chronic pelvic abscess in which a laparotomy was done. During the operation, the heart stopped beating. The apex of the heart was seized through the unopened diaphragm. No impulse could be felt. The heart was grasped between the thumb and fingers as high up on the organ as possible, and rhythmically squeezed. After four minutes of suspended animation, a faint cardiac contraction was felt. This was followed by rapid trip-hammer-like throbs, weak at first, but gaining in force as the rate slowed down to rhythmic beats and the pulse was perceptible in the temporals. The patient was returned to the ward with a pulse rate of 140 and of fairly good volume. Recovery was complete.

Vaccination of Pregnant Women and New-Born.—Lieberman states that women may be vaccinated with safety at any period of their pregnancy, but that immunity is not conferred to the unborn child. New-born infants may be vaccinated on the first day after birth without undue symptoms and without any danger to their future welfare. In clinics, routine vaccination of mothers and infants is advisable both for protection and for spreading civic health propaganda.

Blood Sedimentation Test in Gynecology.—Observations are reported by Benischek and Douglas on cases of acute and chronic inflammatory disease of the pelvis, on pregnancy and its complications, and on benign and malignant neoplasms as well as on uncomplicated uterine displacements. The test was found to have value in establishing a diagnosis.

Benign Uterine Bleeding.—Meigs feels that it seems definitely established that (1) hyperthyroid patients often have oligomenorrhea or amenorrhea and removal of the hypersecreting gland may return the menstrual cycle to normal; (2) true thrombopenic purpura hemorrhagica is a cause of excessive uterine bleeding, and there is a group of patients with slight variation from the normal in their blood picture, a history of petechiae or black and blue spots, and possibly a palpable spleen that have excessive uterine bleeding; (3) there are other causes aside from the ovary and the uterus for benign menorrhagias and metrorrhagias.

Radium Treatment of Endometrioma.—Heineberg is of the opinion that there is a distinct field for the use of radium in the treatment of adenomyoma of the rectovaginal septum, especially in those instances in which the tumor is not small enough to be easily removed through vaginal incision, and not so large that all of it cannot be brought under the influence of radium embedded within it. Its use in properly selected cases avoids the necessity for abdominal incision and unsexing the patient.

Xanthosarcoma of Sacrum.—Dittrick reports a case of benign giant cell tumor of the xanthosarcoma type occurring in the sacrum of a woman, aged 25. Under roentgen-ray therapy the mass very rapidly subsided. After seven years there is no evidence of tumor.

Boston Medical and Surgical Journal

197: 247-286 (Aug. 18) 1927

*Iodine as Therapeutic Aid to Surgery in Primary Hyperthyroidism. H. M. Clute and R. L. Mason, Boston.—p. 247.
Shoeing Problems and Human Foot. C. F. Painter, Boston.—p. 254.
Obstructing Prostate. H. Q. Gallupe, Waltham, Mass.—p. 258.
Subfascial Hemorrhage of Thigh. W. R. Hurley, Boston.—p. 261.
Results of One Year's Bronchoscopic Study. L. F. Johnson, Boston.—p. 263.
Rumination of Outpatient Physician. D. O'Hara, Waltham, Mass.—p. 264.
Public Health Administration in Massachusetts. J. A. Tobey, New York.—p. 266.
*Antimeasles Diplococcus Serum. R. Tunnicliff, Chicago, and B. White, Jamaica Plain, Mass.—p. 272.

Iodine in Hyperthyroidism.—Comparison of the observations in 100 cases of primary hyperthyroidism in which iodine was administered preoperatively and postoperatively as hydriodic acid saturated with iodine, with the observations in similar cases treated with compound solution of iodine, shows almost identical effects from both the clinical and the labora-

tory point of view. Clute and Mason are convinced that iodine is the important factor, not the solution in which it is administered. An excess of iodine is preferable to long-continued smaller doses. Continuation of the iodine therapy for at least three months postoperatively is desirable. In most instances, recurrence of hyperthyroidism after operation indicates that more of the thyroid gland should be removed. In certain cases, however, the recurrence of toxic symptoms may be controlled by iodine. Iodine alone does not cure exophthalmic goiter. Iodine may be cautiously tried in the preoperative preparation of patients having multiple adenomatous goiters with hyperthyroidism.

Antimeasles Diplococcus Serum.—In this paper Tunnicliff and White describe the production in the horse of a specific immune serum by the employment of the green producing measles diplococcus of Tunnicliff. This serum has been concentrated, and when tested in both unconcentrated and concentrated states was found to contain opsonins and to produce neutralizing and protective effects specific for this diplococcus. Administered by injection to children previously exposed to measles infection, it apparently gave complete protection in a few cases, incomplete protection in some and no protection in others.

197: 287-332 (Aug. 25) 1927

*Chronic Benzol Poisoning. F. T. Hunter, Boston, and S. S. Hanflig, Chelsea, Mass.—p. 292.
Obstetric Emergencies from Clinic of Boston Lying-In Hospital: I. F. C. Irving, Boston.—p. 299.
*Periasterial Sympathectomy. A. W. Allen, Boston.—p. 304.
Roentgen Ray in Diagnosis of Appendical Abscess. M. Ritvo, Boston.—p. 307.
Forgotten Salisbury Surgeon: Edward Goldwyre, 1706-1774. W. P. Coues, Boston.—p. 309.

Chronic Benzene Poisoning.—Of the four cases reported by Hunter and Hanflig, the two fatal ones both presented septic temperatures; the two patients who recovered did not. In the fatal cases the white count fell within a short time to below 1,000 and remained low in spite of transfusion. On the other hand, in the patients who recovered, the white count at no time fell below 1,000 and showed more of a tendency to increase after one or two transfusions. In none of these cases was the spleen palpable. This is an important point in differentiating chronic benzene poisoning from idiopathic purpura hemorrhagica and from the so-called aleukemic leukemias. Aside from transfusions, the treatment should be directed toward cleanliness of the mouth in particular and the prevention of intercurrent infection in general. The ultraviolet lamp might be used in small doses to improve the general resistance. The only effective treatment, however, is prevention of poisoning by adequate supervision of industries using benzene.

Periarterial Sympathectomy.—Allen feels that periarterial sympathectomy has a very limited field. In cases in which the circulation is adequate, with vasomotor and trophic disturbances of short duration, and in which proper protection can be given afterward, it may be justifiable. The combined operation of Royle and Leriche as used by Adson may be more effective than periarterial sympathectomy alone, but it is a much more serious undertaking and not without danger. Ramisectomy alone as advocated by Royle is just as effective as the combined operation used by Adson and is a safer procedure. No ill effects from periarterial sympathectomy were observed in any of the eight cases reported by Allen.

197: 333-372 (Sept. 1) 1927

Acute and Chronic Nontuberculous Pulmonary Suppurative Lesions. F. T. Lord, Boston.—p. 333.
*Radiographic Abnormalities of Ileocecal Region. E. S. Emery, Jr., and R. T. Monroe, Boston.—p. 337.
*Syphilis Among Negroes in South. J. E. Paullin, H. M. Davison and R. H. Wood, Atlanta, Ga.—p. 345.
*Basal Metabolism in Chronic Arthritis. L. T. Swaim and L. M. Spear, Boston.—p. 350.
Percival's Medical Ethics. C. D. Leake, Berkeley, Calif.—p. 357.

Radiographic Abnormalities of Ileocecal Region.—Twenty-one cases are reported by Emery and Monroe in which localized changes consisting in irritability or irregularity have been observed in the ileocecal region by the roentgen ray. In four of them, a tuberculous infection was definitely shown to be present; in seven others it was clinically probable. Three cases failed to show any cause for the abnormality at pathologic examination. In seven cases no definite cause could be determined by clinical investigation. Because of the close association of the symptoms and the roentgen-ray observations in most of the cases, it is felt that its recognition and report by roentgenologists is important.

Syphilis Among Negroes in South.—Figures are quoted by Paullin et al. which show that syphilitic infection occurs in approximately 20 per cent of the patients who seek admission to the outpatient department and medical wards of the Grady Hospital. Syphilis, by injury to the two great systems—the central nervous and cardiovascular systems—causes its most marked disability among individuals at a period of life when they should be most productive. Syphilitic heart disease is responsible for the greatest disability of any of the other infections or of all combined infections. Syphilis of the central nervous system is second in importance only to cardiovascular syphilis as a cause of disability. The mortality in the syphilitic group of cases is unusually high and very distressing, the reason for this being that many of these patients are seen only in extremis when no form of therapy can or will avail. The difficulties experienced in giving these patients the treatment they should receive are due to their inherent, inborn mental attitude, regarding not only their disease but life in general.

Basal Metabolism in Chronic Arthritis.—The basal metabolism in 200 cases of chronic arthritis was studied by Swaim and Spear. Thirty-nine per cent presented an abnormal metabolic rate, almost equally divided between plus and minus. Age of the patient, duration of the disease, and activity of disease apparently have no great effect on the metabolic rate in this group of cases. In the infectious type, the plus rate was slightly greater than the minus. But in the atrophic, and especially in the hypertrophic, the tendency was toward the minus rate. In the latter group, only 54 per cent were normal, with the greatest variation from normal of any of the groups. The authors believe that determination of metabolic rate should be made in all cases of chronic arthritis when possible. Some cases showing a plus metabolism, but with a very erratic and unstable graphic chart, have, after the exhibition of thyroid, dropped to a low minus, and as the thyroid has been increased, the metabolic rate has gradually risen to normal and the chart has become much more stable. This has been ascribed to relief from nervous tension in a potential hypothyroid case. It would seem that the use of thyroid in some cases would be of distinct benefit, and this has been borne out by the clinical experience.

California and Western Medicine, San Francisco

27: 145-304 (Aug.) 1927

Incidence and Treatment of Complications of Chronic Gastric Ulcer. D. C. Balfour, Rochester, Minn.—p. 177.
General Practitioner. J. B. Herrick, Chicago.—p. 179.
*Blood Sedimentation in Tuberculous Patients. R. A. Peers, C. J. Durand and T. C. O'Connor, Jr., Colfax.—p. 185.
Three Cases of Bilateral Kidney Calculi. L. I. Oppenheimer, Oakland.—p. 190.
*Chronic Heart Disease Complicating Pregnancy. R. W. Langley, Los Angeles.—p. 193.
Progress in Medicine on Pacific Coast During 1926-1927. P. J. Hanzlik, San Francisco.—p. 196.
*Treatment of Empyema. E. E. Larson, Woodland.—p. 199.
Cervicitis: Treatment. W. E. Hunter, Salt Lake City.—p. 204.
Back Pain of Urologic Origin. A. A. Kutzmann, Los Angeles.—p. 208.
Pulse Pressure. J. M. Read, San Francisco.—p. 211.
Indications for Surgery in Treatment of Hay-Fever and Asthma. S. H. Hurwitz, San Francisco.—p. 212.
Advantages of Ethylene-Oxygen as General Anesthetic. G. A. Johnstone, Glendale.—p. 216.

Blood Sedimentation in Tuberculosis.—Peers et al. conclude from their study that there is a very definite tendency to sedimentation instability of the erythrocytes in the blood of tuberculous patients. There is a more or less definite relation between the degree of tuberculous activity and the sedimentation index of the patient's blood. This relation is shown by the tendency of the sedimentation index to approach the normal as patients improve and as their disease becomes quiescent or arrested. The sedimentation index in a majority of cases of active disease shows a sedimentation index away

from the normal in proportion to the activity and to the seriousness of the patient's condition. The evidence furnished by the sedimentation index cannot at present be allowed to outweigh other evidence, but must be considered merely as additional data in summing up the estimation of activity or in determining the prognosis.

Chronic Heart Disease Complicating Pregnancy.—Thirty-three pregnancies complicated by heart disease analyzed by Langley show that twenty-nine patients probably suffered from organic heart disease; fourteen had mitral stenosis, nine organic mitral regurgitation, four aortic-regurgitation, one heart block, and one mitral stenosis complicated by auricular fibrillation, in five associated with mitral regurgitation. It would seem from this study that abortion is rarely indicated in heart disease complicating pregnancy except when the patients are unable to carry on any physical activity. Such patients are not common. Management will depend entirely on the cardiac reserve force as determined by exercise tolerance tests and not on the basis of the murmurs heard. Surgical intervention should never be withheld at any stage when the evident signs of failure do not disappear with diligent and thorough medical management. From the facts brought out in this report it is believed that maternal mortality should be low when the heart condition has been recognized early and is properly treated.

Treatment of Empyema.—Fourteen cases of acute empyema with one death, a mortality of 7.14 per cent, were reported by Larson. He says that acute empyema should be treated by simple measures, such as repeated aspirations, closed drainage, and thoracotomy later if necessary. Chronic empyema should be treated so as to prevent morbidity and deformity. Expanding the lung to the chest wall rather than collapsing the chest wall to the lung should be emphasized. Employment of a constant suction apparatus to facilitate cavity collapse, and the value of irrigation with surgical solution of chlorinated soda is emphasized. The injection of iodized oil into a cavity is a very effective method of ascertaining the complicating factors which promote chronicity.

Canadian Med. Assoc. Journal, Montreal

17: 881-984 (Aug.) 1927

Myocardium. J. Strickland-Goodall.—p. 881.
Surgeon and Anesthetist. A. Primrose.—p. 886.
Merit System Applied to Hospital Staff. J. D. McEachern, Winnipeg.—p. 890.
Acute Nephritis in Children. G. L. Boyd, Toronto.—p. 894.
Use of Synthalin in Treatment of Diabetes Mellitus. I. M. Rabinowitch, Montreal.—p. 901.
Epidemic of Roseola Infantum. H. B. Cushing, Montreal.—p. 905.
Serology in Arthritis. F. Green, Montreal.—p. 907.
Case of Chronic Dermatomyositis. M. J. Carney, Halifax, N. S.—p. 911.
Polypus of Small Intestine. J. G. MacDougall, Halifax, N. S.—p. 914.
*Blood in Pernicious Anemia. B. S. Cornell, Montreal.—p. 916.
*Differences in Behavior of Raw, Pasteurized, Boiled, Evaporated and Dried Milk at Hydrogen Ion Concentration of Stomach. A. M. Courtney, Toronto.—p. 919.
Belladonna Root. H. M. Lancaster and A. L. Davidson, Ottawa.—p. 923.
Parinaud's Conjunctivitis with Suppuration in Preauricular, Submaxillary and Supraclavicular Glands. S. H. McKee, Montreal.—p. 928.
Thomas' Knee Splint: Suggested Alterations of Design. M. G. Burris, Halifax, N. S.—p. 932.
Hereditary Abnormalities of Eye: V. Inheritable Defects of Iris and Lens. M. T. Macklin, London, Ont.—p. 937.
Case of Mongolian Idiocy Occurring in One of Male Twins. G. Chown, Winnipeg.—p. 943.
Case of Actinomycosis in Child 8 Years Old. L. M. Lindsay, Montreal.—p. 944.
Early Case of Congenital Pyloric Stenosis. L. P. MacHaffie, Ottawa.—p. 946.

Blood in Pernicious Anemia.—In sixty-four cases of true addisonian anemia without history or clinical manifestation of syphilis, Cornell performed the Wassermann test. The patients were in every stage of the disease from the most perfect remissions to coma. The reactions were done within twenty-four hours from the time of taking the specimens. The results were consistently negative. This series does not support the statement that the blood in pernicious anemia frequently gives a positive Wassermann reaction in the absence of syphilis.

Curd of Various Forms of Milk.—The striking difference among the forms of milk studied by Courtney as brought out by his work is in the character of the casein curd thrown down by acid. Evaporated milks give a bulky and fluid curd; milk dried by roller process a rather compact and cheesy curd; and fresh milk, raw, pasteurized and boiled and milk dried by spray process a curd with characteristics between those of the other two groups. The absolute differences in soluble calcium and protein content are not great but may be of significance in some conditions of difficult feeding.

Georgia Med. Assoc. Journal, Atlanta

16: 261-297 (Aug.) 1927

Newer Psychology: Application to General Medicine. W. W. Young, Atlanta.—p. 261.
Dried Yeast Therapy in Psychoses. H. D. Allen, Jr., Milledgeville.—p. 266.
Misconceptions Regarding Malaria. M. A. Fort, Bainbridge.—p. 274.
Intestinal Obstruction. K. C. Rice, Atlanta.—p. 279.

Johns Hopkins Hospital Bulletin, Baltimore

41: 77-136 (Aug.) 1927

True Luschka Ducts and Rokitansky-Aschoff Sinuses of Human Gallbladder. B. Halpert, Baltimore.—p. 77.
*Extramedullary Hematopoiesis in Anemias. D. Brannan, Rochester, N. Y.—p. 104.

Extramedullary Hematopoiesis in Anemias.—According to Brannan, extramedullary hematopoiesis is a fairly common finding in certain anemias of infancy and childhood, and large tumor-like growths of hematopoietic tissue may occur, particularly in the hila of the kidneys. Blood formation outside the bone marrow is occasionally observed in the severe anemias of adults, even in the presence of a hyperplastic bone marrow. Hematopoiesis may be observed in the broad ligaments and in organizing thrombi, as well as in the usual sites. Extramedullary blood production is to be regarded as a compensatory reaction. Blood production may be observed in the broad ligaments and breasts of infants, under apparently normal conditions. In extramedullary hematopoiesis the process appears to start in foci of type cells, either erythropoiesis or leukopoiesis, which substantiates previous observations regarding blood formation in the bone marrow.

Journal of Bacteriology, Baltimore

14: 69-156 (Aug.) 1927

Diffusion Products of Bacterial Cells as Influenced by Electrolytes. H. J. Shaughnessy and C. E. A. Winslow, New Haven, Conn.—p. 69.
Influence of Carbon Dioxide on Bacteria. G. Valley and L. F. Rettger, New Haven, Conn.—p. 101.
Color Diffusion in Endo Agar. E. F. Genung and L. E. Thompson, Northampton, Mass.—p. 139.

Journal of Biological Chemistry, Baltimore

74: 223-407 (Aug.) 1927

Blood Peptide Nitrogen in Arterial Hypertension. H. Jackson, Jr., D. W. Sherwood and O. J. Moore, Boston.—p. 231.
Effect of Amino-Acids on Sugar Metabolism: Optical Activity. W. E. Burge, G. C. Wickwire, A. M. Estes and M. Williams, Urbana, Ill.—p. 235.
Effect of Insulin Injected into Cerebrospinal Fluid. J. V. Supniewski, Y. Ishikawa and E. M. K. Geiling, Baltimore.—p. 241.
Rickets in Rats: III. Metabolism of Calcium and Phosphorus of Rats on Restricted Food Intakes. A. T. Shohl and H. B. Bennett, New Haven, Conn.—p. 247.
Determination of Calcium in Whole Oxalated Blood. C. S. Rothwell, New Haven, Conn.—p. 257.
Animal Calorimetry: Mechanism of Phlorhizin Diabetes. H. J. Deuel, Jr., H. E. C. Wilson and A. T. Milhorat, New York.—p. 265.
Carbon Dioxide Equilibrium in Alveolar Air and Arterial Blood: II. Resting Subjects. D. B. Dill, L. M. Hurxthal, C. van Caulaert, A. Fölling and A. V. Bock, Boston.—p. 303.
Id.: III. Exercising Subjects. D. B. Dill, J. S. Lawrence, L. M. Hurxthal and A. V. Bock, Boston.—p. 313.
*Effect of Antirachitic Vitamin on Phosphorus, Calcium, and p_H in Intestinal Tract. L. Yoder, Ames, Iowa.—p. 321.
Determination of Lactic Acid in Blood. E. Ronzoni and Z. Wallen-Lawrence, St. Louis.—p. 363.
Volumetric Estimation of Hydroxyl Groups in Sugars and Other Organic Compounds. V. L. Peterson and E. S. West, St. Louis.—p. 379.
Quantitative Determination of Iron in Tissues. R. P. Kennedy, Rochester, N. Y.—p. 385.

Effect of Antirachitic Vitamin on Calcium.—Yoder made these observations: In rats fed a rachitic ration, calcium utilization from the intestinal tract changed from a small absorption to a relatively large elimination. Phosphorus

utilization from the intestinal tract of these rats changed at the same time from a slight elimination to a relatively large elimination. Irradiation of rats on a rachitic ration or addition of cod liver oil to such a ration decreased the elimination of calcium through the intestinal tract and, ultimately, the elimination of phosphorus. A preliminary effect of irradiation of rats on a rachitic ration was an increase in phosphorus elimination from the intestinal tract. Cod liver oil in a rachitic ration had a similar but smaller effect. A later effect of irradiation of rats fed a rachitic ration and of cod liver oil in such a ration was a decrease in the elimination of phosphorus through the intestinal tract. Cod liver oil lowered the p_H throughout the intestinal tract of rats on a rachitic ration. Irradiation lowered the p_H of the intestinal tract beyond the duodenum only. There was correlation between lowered p_H and calcium and phosphorus utilization.

Journal of Clinical Investigation, Baltimore

4: 307-458 (Aug. 20) 1927

*Human Capillaries: IV. Nature of Capillary Pulse in Aortic Insufficiency. J. H. Crawford, New York.—p. 307.
*Id.: V. Heart Disease with Regular Rhythm. J. H. Crawford, New York.—p. 317.
*Mechanism of Action of Iodides on Nitrogen Metabolism. G. P. Grabfield, C. Gray, B. Flower and E. Knapp, Boston.—p. 323.
*Blood Sugar Curves in Nondiabetic Subjects. W. G. Lennox, Boston. —p. 331.
*Abnormal Specific Dynamic Action of Protein, Glucose and Fat Associated with Undernutrition. E. H. Mason, Montreal.—p. 353.
Velocity of Blood Flow: VI. Method of Collecting Active Deposit of Radium and Its Preparation for Intravenous Injection. H. L. Blumgart and S. Weiss, Boston.—p. 389.
Id.: VII. Pulmonary Circulation Time in Normal Resting Individuals. H. L. Blumgart and S. Weiss, Boston.—p. 399.

Capillary Pulse in Aortic Insufficiency.—The caliber of the arterial and venous limbs of the capillaries at the nail fold has been investigated by Crawford by means of cinematography in twelve cases of aortic insufficiency in which macroscopic capillary pulsation was present. Simultaneous electrocardiograms were made so that the relation of the capillary changes to the heart beat could be studied. Variations in the diameter of the arterial and venous limbs took place continuously. The changes in the arterial limb in some subjects were more marked than those seen in normal individuals, but the changes in the venous limb as a rule were not so marked as in the arterial and resembled those seen in the normal. No evidence was present to indicate that pulsation due to the heart beat was present in the capillaries examined.

Capillary Pulse in Heart Disease with Regular Rhythm.—The caliber of the arterial and venous limbs of the capillaries at the nail fold has been studied by Crawford by means of cinematography in eight cases of heart disease with normal rhythm. Changes of equal magnitude in the diameter of the arterial and venous limbs of the capillary loop take place from moment to moment. The extent of these changes varies in different capillaries in the same subject; differences are also seen between individual subjects. The magnitude of the variations depends on the state of cardiac compensation and has no relation to the rate of the pulse. The changes do not appear to be due to a peristaltic wave of contraction, to a local rhythmic contraction of the capillaries, or to the action on the capillary wall of a pulsatory motion of the blood stream caused by the heart beat. The cause of their production is uncertain. The blood flow in cases without cardiac decompensation is similar to that seen in normal subjects, while in cases of cardiac decompensation the flow is slow and irregular such as was observed in cases of auricular fibrillation with a comparable degree of decompensation.

Effect of Iodides on Nitrogen Metabolism.—Grabfield et al. noted that a 27 per cent increase in the daily nitrogen excretion of dogs on a constant diet followed the subcutaneous injection of a solution of sodium iodide. This increase in nitrogen excretion was not accompanied by an increase in sulphur excretion. The increase of nitrogen excretion following the injection of sodium iodide did not occur after the removal of the thyroid gland in two dogs. It seems evident that the presence of the thyroid gland is necessary for the mobilization and excretion of this nitrogen following the administration of iodides. It is suggested that the thyroid may have as one of its functions (apart from its effect on the basal metabolism) the mobilization of "deposit nitrogen" poor or lacking in sulphur.

Blood Sugar Curve in Nondiabetic Patients.—Repeated blood sugar curves, about 300 in number, have been made by Lennox in a group of fifty nondiabetic subjects, at intervals of days or months. In the majority of the subjects, there was progressive lowering of successive curves following both ingestion and injection of dextrose. Of the twenty-five subjects with abnormally high initial blood sugar curves, twenty-one of the curves were lower on second trial. A single blood sugar curve test, therefore, may be without diagnostic significance, and a lowered subsequent curve may not necessarily be due to the experimental or therapeutic procedures introduced between the first and second tests. The unduly prolonged hyperglycemia which follows ingestion of dextrose and injection of epinephrine in fasting would seem to be due to the lack of stimulation of the sugar-regulating mechanism. A minority of the subjects studied showed constant high blood sugar curves and presumably belong to the group from which diabetic patients are to be recruited.

Specific Action of Protein, Dextrose and Fat in Undernutrition.—Six cases of undernutrition, five with and one without symptoms of ill health, are reported by Mason which show varying abnormalities of specific dynamic action for protein, dextrose and fat. These abnormalities are compared with the observations in a "control" group of adult hospital patients. The five cases in which the undernutrition was associated with symptoms presented basal metabolic rates varying from minus 15 to minus 31 per cent. Regulation of food intake in accordance with the altered specific dynamic action resulted in a gain of weight in four cases. In the other two sufficient time has not elapsed to make a definite statement. In three cases, coincident with a gain in weight, the abnormal observations with respect to specific dynamic action largely disappeared.

Journal Lab. & Clin. Med., St. Louis

12: 1037-1134 (Aug.) 1927

Ameba Councilmania Lafleuri. R. J. Pickard, San Diego, Calif.—p. 1037.
*Tryptophan Reactions in Spinal Fluid. B. S. Walker and F. H. Sleeper, Worcester, Mass.—p. 1048.
*Lactobacillus Acidophilus. C. Roos, Philadelphia.—p. 1053.
Acetone Body Formation and Chemical Affinity of Oxygen for Carbohydrate and Fatty Acid. D. M. Ervin, San Francisco.—p. 1059.
Spontaneous Death in Rabbit with Isolation of Type IV Pneumococcus. E. S. Sanderson, Charlottesville, Va.—p. 1065.
Study of Bile Secretion from Case of Biliary Fistula. S. G. Ross, Pasadena, Calif.—p. 1067.
Barbituric Acid Derivatives as Anesthetics. J. F. Pearcy, Chicago, and M. M. Weaver, Morgantown, W. Va.—p. 1071.
Bacteriophage in Old Stock Cultures. G. M. Kline, Albany, N. Y.—p. 1074.
*Comparison of 10,000 Wassermann and Kahn Tests Run in Parallel. L. D. Thompson and E. Ebel, St. Louis.—p. 1087.
Determination of Fibrin in Blood Plasma. J. Chandler, Boston.—p. 1092.
Device for Dilution of Antigen in Kahn Precipitation Test. H. Silvette, Richmond, Va.—p. 1096.
Urine Preservatives. J. J. Short and A. Piatetzky, New York.—p. 1098.
Blood-Urine Density Index. D. Polowe, Paterson, N. J.—p. 1100.
Chart for Reading Color Index of Blood. H. Silvette, Richmond, Va.—p. 1108.
Simplification of Kolmer Test. J. B. Rucker, Jr., Toledo, Ohio.—p. 1109.
Determination of Coagulation and Retraction Time of Blood. J. W. Sorg and T. S. Moise, New Haven, Conn.—p. 1113.
Variable Filter for Microscope. R. F. Feemster, Louisville, Ky.—p. 1116.
*Cedar Oil as Aid in Finding Parasitic Ova in Feces. G. E. Hein, San Francisco.—p. 1117.

Tryptophan Reactions in Spinal Fluid.—The Boltz reaction is shown by Walker and Sleeper to be dependent on the tryptophan present in the protein molecule. It varies in intensity with the amount of protein present in spinal fluids and in egg albumin solutions of known protein content. This relationship has been found not to be strictly quantitative, as a result of varying tryptophan content and of the presence of interfering substances in varying quantity. It is suggested that the Boltz reaction may be of considerable value in estimating increases in the protein content of spinal fluid, although it cannot be considered as specific for any single clinical entity.

Variations of Bacillus Acidophilus.—Roos concludes that the name *Lactobacillus acidophilus* should be applied to a group of biologically related strains, variable in cultural and morphologic characteristics. He regards the various types of strains of lactobacilli found in the intestinal tract as variants. The presence of acidophilic bacilli in the intestinal tract of man is natural and beneficial. Culturally identical strains may show distinct immunologic differences, depending on human or animal sources, indicating a change due to adaptation to a particular environment. Therefore, it seems logical to use for therapeutic purposes only strains of *Bacillus acidophilus* isolated from normal human sources. Such a strain should be vigorous, not fastidious as to nutrient requirements, little sensitive to oxygen tension, capable of growth in a medium of varied surface tension, and with a wide temperature range. Such is the strain of choice, provided it meets the crucial test of proved therapeutic value.

Comparison of Wassermann and Kahn Tests.—In the large series of tests reported on by Thompson and Ebel, the Kahn test failed to detect syphilis in 6.9 per cent of cases. The Wassermann test failed in 9.1 per cent of cases.

Journal of Nervous & Mental Dis., New York

66: 105-216 (Aug.) 1927

Functional Psychoses as Evolution of Psychic Impotency. J. H. Cassity, Washington, D. C.—p. 105.
*Relation of Occupation to Migraine. W. Allan, Charlotte, N. C.—p. 131.
*Metastatic Carcinoma of Central Nervous System. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 133.

Relation of Occupation to Migraine.—The occupations of 400 migrainous patients have been tabulated by Allan as compared with the occupations of 1,000 nonmigrainous patients. Among the women, the housewives outnumbered all others; among the men, the business men were in the majority. Housewives: normal women, 360; migrainous patients, 191. Business men: normals, 233; migrainous, fifty-nine. The business women came next with thirty-seven migraines, and the professional men with thirty.

Cerebral Metastases from Breast and Prostate Cancer.—Of the twenty-three cases presented by Winkelman and Eckel, seven of the metastatic tumors had their origin in the breast and five came from the prostate. There is said to be no characteristic group of symptoms by which a metastatic tumor to the nervous system is to be diagnosed. The history of a primary tumor, particularly in the breast or prostate, is of great importance.

Journal of Urology, Baltimore

18: 127-233 (Aug.) 1927

Urethral Diverticula. B. B. Nicholson, Detroit.—p. 145.
Diverticulum of Urinary Bladder. W. S. Pugh, New York.—p. 167.
Illumination of Bladder Diverticula by Diverticulite. W. B. Tatum, New York.—p. 173.
Complete Epispadias, with Incontinence, Cured by Operation. M. Muschat, Philadelphia.—p. 177.
Horseshoe Kidney Diagnosed Before Operation. D. N. Eisendrath, D. F. Rudnick and W. Baker, Chicago.—p. 187.
Distensible Bag for Hemostasis and Drainage Following Perineal Prostatectomy. E. Davis, Omaha.—p. 201.
Suction as Applied to Urologic Cases. J. F. McCarthy and J. S. Ritter, New York.—p. 211.
Irrigating Cysto-Urethroscope for Applying Heat to Prostate and Vesical Orifice Under Vision. O. S. Lowsley, New York.—p. 221.

Maine M. A. Journal, Portland

18: 139-156 (Aug.) 1927

Medical Standards. L. P. Gerrish, Lisbon Falls.—p. 139.
Safeguarding Our Patients. E. H. Risley, Waterville.—p. 141.
Lord Lister. J. A. Spalding, Portland.—p. 149.

Medical Journal and Record, New York

126: 201-268 (Aug. 17) 1927

Surgical Biliary Drainage. J. B. Deaver and V. G. Burden, Philadelphia.—p. 201.
Hair Dyes: Dangers. O. L. Levin, New York.—p. 204.
Medical Treatment of Gallstones. C. S. Webb, Bowling Green, Va.—p. 206.
Public Health Value of Concentrated Milk. J. A. Tobey, New York.—p. 208.
Cancer: XXI. Genesis; Predisposition. W. Meyer, New York.—p. 212.
Cancer. A. H. Wright, Toronto.—p. 214.
Psoriasis Treated with Injections of Thymus Solution. F. F. Ward, New York.—p. 216.
Biology of Skin Reactions; Tuberculosis and Syphilis. F. Herb, Chicago.—p. 217.
Some Medieval Medicine. W. R. Riddell, Toronto.—p. 221.
Control of Hemorrhage in Connection with Tonsillectomy. W. A. Wells, Washington, D. C.—p. 227.
Tonsils: Treatment Other Than Enucleation. S. Pern, Melbourne, Australia.—p. 233.
Chronic Infection of Sphenoid Sinus: Obscure Headache and Other Subjective Symptoms. H. M. Schachter, New York.—p. 236.
Vincent's Infection of Mouth and Throat. L. O. Mauldin, Greenville, S. C.—p. 240.
Foreign Body in Larynx. A. Lobell, New York.—p. 242.
Radium Emanation Treatment of Cervical Cancer: II. J. Muir, New York.—p. 243.
Bromide-Chloride Treatment of Epilepsy. A. Ulrich, Zurich, Switzerland.—p. 245.

Military Surgeon, Washington, D. C.

61: 129-292 (Aug.) 1927

Reminiscences of American-Filipino War, 1899. C. M. Beadnell.—p. 129.
Revolutionary Hospital Ship. L. J. Bragman.—p. 153.
Medical Service of Infantry Division. T. L. Rhoads.—p. 156.
Lorain Disaster. F. J. Vokoun.—p. 180.
Ocular Fatigue. C. Berens, L. H. Hardy and H. F. Pierce.—p. 184.
Ambroise Paré. J. M. Bodenheimer.—p. 194.
*Repeated Cesarean Sections. J. M. Troutt.—p. 200.
Personal Recollections of Some Old Medical Officers. H. C. Yarrow.—p. 204.

Repeated Cesarean Sections.—Troutt reports the case of a woman on whom four cesarean sections had been performed, with four living children.

Missouri State M. A. Journal, St. Louis

24: 397-442 (Sept.) 1927

*Leukocyte Count in Acute Surgical Conditions. M. P. Neal and D. A. Robnett, Columbia.—p. 397.
*Leukocyte Count in Appendicitis. R. Koritschoner, Kansas City.—p. 406.
*Treatment of Pernicious Anemia. A. P. Munsch, St. Louis.—p. 408.
Pernicious Anemia. F. I. Ridge, Kansas City.—p. 410.
General Treatment of Fractures. C. E. Hyndman, St. Louis.—p. 414.
Penetrating Wounds of Chest. T. G. Orr, Kansas City.—p. 417.
Diffuse Peritonitis: Management. O. Putman, Marceline.—p. 420.
Therapy. M. L. Sands, Warsaw.—p. 423.

Leukocyte Count in Acute Surgical Conditions.—To demonstrate the value of the leukocyte count as compared to the diagnostic signs and symptoms of acute abdominal conditions, Neal and Robnett analyzed closely 182 acute surgical cases. In this group the leukocyte counts indicated operation a necessity when there were no clinical signs or symptoms indicating that such was necessary in six cases, two being gangrenous appendixes and one an empyema of the gallbladder with gangrene. This group would have gone to a more general infection and probably death had not intervention been done as a result of the blood counts. The authors are convinced that the proportionate leukocyte count is the safest and most dependable guide in deciding on the necessity for operative intervention. Particularly is this true in the most severe cases in which clinical signs and symptoms at their best are often deceptive. Repeated complete counts are of incalculably more value in the diagnosis and prognosis of a case than is a single isolated count, and must be obtained when there is doubt. A falling total count does not necessarily mean a subsiding disease. It may indicate an overwhelmed or broken resistance by a massive highly virulent infection, a spreading fulminating infection, thrombosis of the vessels, or gangrene. A falling total count with a stationary or rising neutrophil percentage demands immediate operation and warns one to give a guarded or grave prognosis.

Leukocyte Count in Appendicitis.—Koritschoner is of the opinion that the relative value of the leukocyte count in appendicitis is of value only in cases of acute and so-called chronic appendicitis when correlated with the clinical observations. In this they are of value in that they offer some basis for prognosis. Yet there is much to be said for the routine blood examination, and as an aid, but not as a diagnostic feature, it should not be neglected.

Treatment of Pernicious Anemia.—Munsch believes that patients with true pernicious anemia improve more on the special diet as recommended by Minot and Murphy than with

any other known method of treatment at present. The necessity for blood transfusion in these cases has been reduced more than 90 per cent. None of Munsch's patients have died of true pernicious anemia while partaking of this diet.

New York State J. Med., New York

27: 939-996 (Sept. 1) 1927

*Treatment of Bladder Tumors. W. W. Scott and R. W. McKay, Baltimore.—p. 939.
*Liver Feeding in Suppurative Conditions. H. L. Nelms, Albany.—p. 949.
Photographs of Fundus Oculi. A. J. Bedell, Albany.—p. 951.

Treatment of Bladder Tumors.—Six hundred and twenty-two cases of bladder tumors are reviewed by Scott and McKay. The essential factor in the treatment of bladder tumors is said to be their proper classification as to the type of growth. The tumor having been properly classified, it is not, as a rule, difficult to select the most appropriate form of therapy. Benign papillomas always respond to fulguration alone, but these tumors often disappear much more rapidly when cystoscopic applications of radium are used in addition to fulguration. These tumors recur, and often it is necessary to have the patients return from time to time for cystoscopic examination over a period of several years after the primary growth has been destroyed. Malignant papillomas very frequently respond to fulguration alone, but much more satisfactory results are obtained if the tumor is first thoroughly treated by cystoscopic applications of radium and then fulgurated. These tumors recur more frequently than the benign type, and this necessitates the patient's return for cystoscopic examination at intervals of every few months. Papillary carcinomas, if not too extensive, usually respond to radiation plus fulguration, and should first be subjected to this combined therapy. In a few cases in which this therapy has failed, the tumor has responded to the roentgen ray. Should these methods fail, the tumor should be resected if it is in a favorable location for such a procedure. If its location is unfavorable, it should be cauterized superficially and implanted with radium or treated with deep diathermy. All infiltrating carcinomas, if their location is favorable and the patient's general condition permits, should be resected. When this is impossible, the combined radium and deep roentgen-ray therapy should be tried, and if this fails, the tumor should be treated by cauterization and implantation of radium, if it is not too extensive. The value of diathermy as a therapeutic measure in the treatment of infiltrating carcinomas of the bladder has not yet been definitely established. Deep roentgen ray, when used alone, has been disappointing from the standpoint of tumor destruction. However, it has been of great value in diminishing the intensity of pain due to nerve involvement.

Liver Feeding in Suppurative Conditions.—Nelms has observed the influence of liver feedings in severe secondary anemias, especially those following long drawn out suppurative conditions. He believes that the use of liver shortens the period of convalescence, increases the patient's resistance, and has a favorable influence on the course of the disease. The treatment proved successful in a case of suppurative arthritis in which later a septicemia developed, in a case of wound infection following an interval appendectomy which was later complicated by a septic sore throat, acute otitis media, mastoiditis and erysipelas, and a case of intense cellulitis of the arm, extending from the wrist to the shoulder. In addition to the liver, these patients were also given Blaud's pills.

Public Health Journal, Toronto

18: 351-400 (Aug.) 1927

Staining Reactions of Bacteria. G. Dowsley, Vancouver.—p. 351.
Evaluation of Public Health Nursing. A. B. Chandler, Montreal.—p. 376.
Plumbing and Health. W. H. Meadows, Toronto.—p. 383.

Public Health Reports, Washington, D. C.

42: 2097-2137 (Aug. 19) 1927

*Two Cases of Rat-Bite Fever. A. P. Rubino, New Orleans.—p. 2097.
Dietetics in Institutions and in Field. L. Minnigerode, Washington, D. C.—p. 2099.

Rat-Bite Fever.—The two cases reported by Rubino occurred in persons who were infected while catching rats for experimental purposes. While there was no inoculation of animals with blood from these patients, diagnoses of rat-bite fever were made because of the intermittent relapsing fever following a rat bite, the regional lymphadenitis without suppuration, a characteristic exanthem, and response to treatment with neoarsphenamine.

Radiology, St. Paul

9: 89-178 (Aug.) 1927

Growth and Structure of Infant Thorax. R. E. Scammon, Minneapolis.—p. 89.
Roentgen-Ray Assistance in Solving Genito-Urinary Problems. E. C. Koenig, Buffalo.—p. 104.
*Pyelography in Renal Tuberculosis. W. M. Kearns, Milwaukee.—p. 109.
*Value of Pyelo-Ureterography as Diagnostic Aid. V. J. O'Conor and A. Remmert, Chicago.—p. 125.
*Roentgenologic Study of Aorta. B. H. Nichols, Cleveland.—p. 136.
Thymic Enlargement in Children. J. C. King, Memphis, Tenn.—p. 148.
Skull Pathology Revealed by Roentgen Ray. S. B. Whitlock, Norfolk, Va.—p. 153.
Action of Tetraiodophenolphthalein on Heart. W. D. Reid and F. L. Kenway, Boston.—p. 162.
*Foreign Body in Colon. S. Brown, Cincinnati.—p. 164.
Diagnosis of Anencephalus Before Birth. R. J. Maier, Chicago.—p. 166.

Pyelography in Renal Tuberculosis.—Kearns says that the pyelogram in tuberculosis is rarely necessary, often lacks reliability, and is attended with danger.

Pyelo-Ureterography.—O'Conor and Remmert have found pyelo-ureterography to be of great value as a diagnostic aid. However, it is only one of the valuable urologic procedures necessary to an accurate diagnosis and should not be utilized except in proper conjunction with analytic, functional and bacteriologic data.

Roentgenologic Study of Aorta.—Nichols is of the opinion that aortitis is the most common disease of the aorta; yet many cases remain undiagnosed until they have reached a late stage. Early clinical symptoms that should lead one to suspect the presence of this disease are (1) shortness of breath on exertion and a feeling of oppression in the chest; (2) sighing respiration; (3) a feeling of oppression in a close room; (4) pain of anginal character; (5) orthopneic dyspnea. The roentgen ray is the most reliable method of early diagnosis of aortitis or aneurysm; or for confirmation of the diagnosis and for determination of the extent of the disease. In aortitis the aortic shadow is increased in density by the pathologic condition of its walls. This increased density, therefore, is of importance in the diagnosis of aortitis. An injection of iodized oil is helpful in some cases to determine the exact position of the tracheal walls.

Surgical Gauze in Colon.—Brown reports the case of a woman who complained of frequent attacks of pain at the lower tip of the left shoulder blade, the pain radiating along the lower left ribs toward the left groin. An operation for gallstones was performed five months previously. While examining a pyelogram there was noticed an elongated shadow which was sharply defined within the lumen of the transverse portion of the colon in the neighborhood of the left kidney. The view taken with the Bucky-Potter diaphragm revealed the same shadow in a somewhat different position, but again following the course of the colon. While the patient was in the process of evacuating the bowels she noticed a strange substance making its exit from the rectum. It proved to be a piece of surgical gauze, a pad such as is generally used in abdominal operations. It probably was left in the peritoneal cavity during the operation for gallstones. The substance had penetrated the large bowel without producing a general peritonitis.

Tennessee State Med. Assoc. Journal, Nashville

20: 111-150 (Aug.) 1927

Charity and Eugenics. R. B. Wood, Knoxville.—p. 111.
Cardiospasm, Esophageal Obstruction and Dilatation: Treatment. J. Witherspoon, Nashville.—p. 116.
Hydronephrosis. C. F. Anderson, Nashville.—p. 122.
Jaundice. S. Burrus, Paris.—p. 126.
Diagnostic Value of Fundus Oculi Changes to Internist and Surgeon. A. C. Lewis, Memphis.—p. 129.
Pellagra. E. L. Bishop, Nashville.—p. 131.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Actinotherapy, London

2: 81-100 (Aug.) 1927

*Ultraviolet Rays in Treatment of Some Disorders of Digestive Tract. W. W. Forsyth.—p. 84.
Electrotherapeutics and Ultraviolet Light. C. B. Heald.—p. 86.

Ultraviolet Rays in Digestive Tract Disorders.—Forsyth reports cases of catarrhal jaundice in children, marasmus in infants and diarrhea in adults in which ultraviolet rays proved to be a highly successful therapeutic measure, removing the effects of the disease by means of their bactericidal and general tonic properties, and often leading to a cure by their action on the blood, nervous, vasomotor and endocrine systems.

British Journal of Surgery, Bristol

15: 1-224 (July) 1927

"System of Surgery" by Master John Arderne. D. Power.—p. 1.
Achondroplasia (Chondrodystrophia Foetalis). R. L. Knaggs.—p. 10.
*Traumatic Rupture of Normal Spleen. H. Bailey.—p. 40.
*Spontaneous Rupture of Spleen. M. P. Susman.—p. 47.
*Cancer of Tongue: Radium Treatment. A. Evans and S. Cade.—p. 55.
*Carcinoma of Esophagus: Treatment by Diathermy. A. J. Wright and G. Hadfield.—p. 71.
*Treatment of Carcinoma of Esophagus. H. S. Souttar.—p. 76.
*Operation for Slinging Dropped Shoulder. A. K. Henry.—p. 95.
Polypi of Intestine: Adenomata. J. H. Saint.—p. 99.
Some General Diseases of Skeleton. H. A. T. Fairbank.—p. 120.
*Effusion into Lesser Sac of Peritoneum Associated with Gallstones; Posterior Drainage. G. T. Mowat.—p. 143.
Case of Carcinomatosis Following Treatment by Radium. J. B. Hunter.—p. 159.
Case of "Wandering Spleen" Causing Intestinal Obstruction. H. A. H. Harris.—p. 163.
Hydrocele of Femoral Hernial Sac. H. Bailey.—p. 166.

Traumatic Rupture of Normal Spleen.—Thirty-two cases are analyzed by Bailey. Experiments on animals have led investigators to believe that splenectomy lowers resistance to infection. Bailey traced thirteen persons who have had a ruptured normal spleen removed. Two of these were operated on fourteen and thirteen years ago, respectively. In the remainder, between three and eleven years has elapsed since the operation. In no instance is there the slightest indication that a splenectomized person is more susceptible to infection than the rest of humanity.

Spontaneous Rupture of Normal Spleen.—A case of spontaneous rupture of an apparently normal spleen is recorded by Susman; only six similar cases could be found in the literature. Of the seven patients, five had previous digestive symptoms; of these five, one had gallstones and another pulmonary tuberculosis and alcoholism; in the remaining three cases no cause of the digestive symptoms was found; possibly they were due to some splenic lesion, evidence of which was destroyed at the time of rupture.

Radium Treatment of Tongue Carcinoma.—The treatment of seventeen cases of cancer of the tongue is reviewed by Evans and Cade. In each case the clinical diagnosis was confirmed by histologic examination. In sixteen of these cases the primary growth in the tongue completely disappeared after treatment. A combination of surgical excision and radium therapy appears to be the most satisfactory method.

Diathermy in Carcinoma of Esophagus.—Wright and Hadfield show that it is possible to employ diathermy in malignant disease of the esophagus without undue risk, and at any rate with alleviation of symptoms.

Treatment of Carcinoma of Esophagus.—Souttar's study, based on 100 clinical cases and eighteen postmortem examinations, appears to prove that carcinoma of the esophagus is a highly malignant form of growth; that it fails to produce widespread secondary deposits only because it destroys the patient at an early date; that its earliest symptoms, usually those of obstruction, appear only at a late stage of the disease, and that it therefore neither is nor ever can be amenable to direct surgical attack, except in cases so rare as to be of no practical importance.

Operation for Dropped Shoulders.—A method is described by Henry by which a case of shoulder-drop was successfully treated by slinging the scapula to the spines of the sixth cervical and third dorsal vertebrae by means of 10 inches by ½ inch fascial strips taken from the thigh.

Effusion into Lesser Sac of Peritoneum.—The fluid in Mowat's case was definitely contained in a sac, the wall of which was lined with peritoneal membrane, and which conformed to the usual boundaries of the lesser sac. It was serous fluid containing organisms or pancreatic enzymes. The pancreas was uniformly normal; there were no patches of thickening, no cysts, nor anything to suggest a pancreatitis secondary to the biliary condition. The presence of dense adhesions around the upper end of the common bile duct, blocking the foramen of Winslow, and unassociated with any symptoms, suggests a low type of inflammatory condition which spread directly to the lining of the lesser sac, giving rise to slow effusion.

British Medical Journal, London

2: 197-244 (Aug. 6) 1927

Report of Lunacy Commission (England). G. M. Robertson.—p. 197.
*Injections of Acriflavine for Tuberculosis. R. Aidin.—p. 217.
Pillion-Riding Accident. D. I. Currie.—p. 217.
Measles Simulating Scarlet Fever. J. Wilson.—p. 217.

Injections of Acriflavine in Tuberculosis.—Aidin injected 1 cc. of 1:1,000 acriflavine in saline solution twice a week in nine cases of bone, lung and peritoneal tuberculosis without any change for the better in the course of the disease.

2: 245-290 (Aug. 13) 1927

Relation of Pregnancy to Cardiac Disease. J. M. M. Kerr.—p. 245.
*Id.: II. Tuberculosis. E. Rist.—p. 247.
*Id.: III. Venereal Diseases. F. J. Browne.—p. 250.
*Id.: IV. Cardiac Disease. G. Fitzgibbon.—p. 253.
*Ultraviolet Radiation in Dermatology. S. E. Dore.—p. 255.
Treatment of Lupus Erythematosus by Krysolgan. H. C. G. Semon.—p. 258.
*Treatment of Ringworm of Scalp by Thallium Depilation. G. B. Dowling.—p. 261.
*Id.: A. Seaston and C. R. Wilson.—p. 263.
*Nasal Headaches. E. M. Atkinson.—p. 264.
*Etiology of Fibrous Stricture of Urethra. A. O. Ross.—p. 266.
Miners' Nystagmus in Surface Worker. H. S. Russell.—p. 267.
Treatment of Gonorrhea. R. Cock.—p. 267.

Pregnancy and Tuberculosis.—The figures given by Rist show clearly that pregnancy is a decidedly aggravating factor in tuberculosis of the lungs. The picture is not quite so dark in patients already treated with artificial pneumothorax when they became pregnant. The older the collapse, the better the result.

Pregnancy and Venereal Disease.—Browne advocates the compulsory notification of pregnancy at an early period, say the third or fourth month. Only in that way will all cases of syphilis in pregnancy be discovered at such an early period that effective treatment may be carried out. If all syphilitic pregnancies ended in abortion or the birth of macerated fetuses such early notification would not matter. Diagnosis could be made at delivery and treatment carried out before and during the next pregnancy. But such a happy termination does not always take place. A baby may be born alive and continue to live with congenital syphilis, and grow up to be a burden to itself and the community.

Pregnancy and Cardiac Disease.—Fitzgibbon asserts that cardiac lesions tend to produce abortion and diminish the incidence of pregnancy. A woman who has decompensated during labor, and more particularly during pregnancy, is likely to abort in the first few months of a subsequent pregnancy, or to remain actually sterile. Primigravidas and multiparas who have never been decompensated during pregnancy may be allowed to continue through pregnancy and labor, with special care during the last eight and sixteen weeks, respectively. If decompensation occurs during pregnancy, treatment should be directed only to reestablishing the cardiac function, and the patient should be kept at rest until after delivery. Primigravidas may be allowed to go through labor, but multiparas will probably be best delivered by section at the thirty-sixth week and should be sterilized. If decompensation occurs in a multipara before the thirtieth week the cardiac state should be reestablished and then the

pregnancy terminated, as the probability of the pregnancy reaching a period when the fetus will be likely to survive is practically nil. If labor sets in during the acute period of decompensation it is easy and rapid, and natural delivery will give as good a prospect as operative; the second stage should be shortened by forceps. A woman who has suffered from loss of compensation during labor should be kept at rest from the twenty-fourth week of a subsequent pregnancy, and this pregnancy should be terminated by section with sterilization at the thirty-sixth week. A woman who has decompensated during pregnancy should never be allowed to continue another pregnancy, and such pregnancy would be best terminated by section and sterilization. Induction of labor has no place in the treatment during decompensation, and at other times would be better replaced by section and sterilization as a means of terminating a pregnancy.

Actinotherapy in Dermatology.—Dore believes that there has been a growing tendency to exaggerate the results of actinotherapy in recent years. His views today are the same as those stated in 1902: "Although in our opinion the results we have obtained have fully justified the employment of the treatment, and in some cases no other treatment could have produced such good results, we do not regard it as the only method to be used in all cases nor advocate it indiscriminately to the exclusion of other methods."

Thallium Epilation in Ringworm.—In view of the fact that thallium is toxic, particularly in children over 4 or 5 years old, Dowling would reserve its use for very young children of 4 years and under, and for cases in which roentgen rays have already failed, or are not available, or are contraindicated.

Thallium Epilation in Ringworm.—Seaston and Wilson warn against the toxic effect of thallium and advise that in all cases routine examinations of the urine should be made. The drug must be of recent manufacture, and, if the solution method is used, the solution should not be kept more than a day.

Nasal Headaches.—Evidence is presented by Atkinson that more cases of headache are due to nasal disease than is generally realized, and that the rhinologist can often help heads as well as noses.

Etiology of Fibrous Stricture of Urethra.—Analysis of fifty cases by Ross showed that stricture of the urethra is more common in cases in which there are coincident syphilis and gonorrhea, and it is good practice to ascertain the Wassermann reaction of the blood in all cases of stricture. In cases of long duration a negative Wassermann reaction may become positive after a provocative dose of neoarsphenamine.

Journal of Mental Science, London

73: 361-508 (July) 1927

Some Work Done to Elucidate Pathology of Disease Falling to Be Considered Under Rubric "Insanity." E. Goodall.—p. 361.
Induction of Abortion in Treatment and Prophylaxis of Mental Disorder. J. R. Lord.—p. 390.
*Unusual Mental Hospital Epidemic. C. B. Molony.—p. 397.
*Mechanism of Functional Psychoses. L. C. F. Chevens.—p. 402.
*Endocrine Therapy. L. Minski.—p. 414.
*Acetic Anhydride-Sulphuric Reaction for General Paresis. A. G. Duncan.—p. 419.
Time Sense. W. W. Hall.—p. 421.
*Unusual Form of Suicide. G. A. Auden.—p. 428.
Case of Pellagra. E. B. White.—p. 430.
Case of Pellagra with Recurring Attacks. W. J. T. Kimber.—p. 433.

Epidemic of Nephritis in Mental Hospital.—At a mental hospital, over a period of five years prior to Sept. 12, 1926, among an average population of 624, only one case of acute nephritis was recorded. In the three months following that date, seventeen cases of acute inflammation of the kidneys were observed. Molony feels that this outbreak must have been due to some infection the nature of which could not be determined, possibly some hematogenous toxin or virus.

Mechanism of Functional Psychoses.—An attempt is made by Chevens to show that the mechanism in all the so-called functional psychoses is similar, i. e., the real situation is intolerable owing to the nonsatisfaction of the patient's urges and desires, so that satisfaction is acquired in a world of fantasy. This is true for paranoia, schizophrenia and the manic-depressive psychoses.

Endocrine Therapy.—Minski is convinced that the administration of thyroid gland—in large doses over a period of six days—is always worth a trial in the case of any patient who, after an attack of acute mental disorder, has passed into a stuporose state and has all the appearance of becoming the victim of secondary dementia and of swelling the numbers of the chronic insane. On the first day of the treatment he gives a large initial dose, as a rule, 45 grains (3 Gm.) of thyroid extract (15 grains [1 Gm.] thrice daily). On the next five or six days, 60 grains (4 Gm.; 15 grains four times a day) are given, provided the patient's condition is satisfactory.

Test for General Paralysis.—In Duncan's experience the acetic anhydride-sulphuric reaction is positive in almost all cerebrospinal fluids. As a test for general paralysis it is valueless, since many other fluids give just as strongly positive results. The reaction depends on the presence of protein in the spinal fluid, and is probably identical with the Hopkins-Adamkiewicz test. In twenty-seven cases of general paralysis, the test was positive in all; in 127 other cases, the test was positive in all but six.

Unusual Form of Suicide.—Auden relates a curious manner of committing suicide. The body was on its back, with the feet extended away from the bed. Placed across the throat was a woman's high-heeled suede outdoor shoe, which was laced onto a bootmaker's iron boot-last. On this was resting a stout piece of wood which was packed into the shoe by means of a newspaper. Over the boot-last, and round the base of the wood, was a woman's stocking. On the upper end of the wood was balanced the bottom end of a heavy double bedstead, in such a way that the whole weight of the bed was transmitted to the shoe, and so to the throat. The right foot of the bed was resting on a chair which had fallen on its side, the left foot being in the air; the chair on which it had rested was lying on its side, having evidently been pulled away.

Lancet, London

2: 317-366 (Aug. 13) 1927

Toxemia of Acute Intestinal Obstruction. R. S. L. Brockman.—p. 317.
*Acid-Base Equilibrium in Psychoses. I. Robertson.—p. 322.
*Association of Low Blood Cholesterol with Fits in Epileptics. S. H. G. Robinson, W. R. Brain and H. D. Kay.—p. 325.
*Experimental Cancer: Action of Glycerin on Tissue Cells: Method of Rendering Ulcerated Tumor Tissue Relatively Safe for Transplantation. A. Compton.—p. 327.
Sarcomatosis Cutis and Mycosis Fungoides by Roentgen Rays. A. Whitfield.—p. 328.
Toxic Neurolabyrinthitis Following Induction of Labor by Quinine. F. P. Sturm.—p. 329.

Acid-Base Equilibrium in Psychoses.—The gastric secretion and the correlated alveolar carbon dioxide tension has been studied by Robertson with the following results: A normal type of gastric secretion was found in only 20 per cent of the psychotic patients. Comparison of the gastric and alveolar carbon dioxide tension curves shows that a definite correlation does exist between the two types of curve. A comparison between the gastric secretory curves following a pure protein and a gruel meal shows that this abnormality persisted and could not therefore be ascribed to an abnormal response to types of food. There is evidence to show that depressed, anergic patients belonged to the hyposecretory group and that those patients who were agitated showed definite hypersecretion.

Blood Cholesterol in Epilepsy.—Robinson et al. conclude that the low blood cholesterol in patients with epilepsy might possibly be explained as the result of the muscular exercise of the convulsions. While in normal persons the cholesterol value rapidly returned practically to its original level after the sudden fall, in epileptic patients the cholesterol appeared to remain low for a much longer period. A fall in the blood cholesterol, accompanied by a fall in the plasma cholesterol, occurred in ten of eleven cases, the fit taking place at or about the lowest point in the curve—i. e., the fall in the cholesterol level precedes the seizure. Subsequent to the fit, the blood and plasma levels rose again toward the normal. In the eleventh case the rise had already begun when the fit developed. The cholesterol content of the plasma shows the fall and rise rather better than does that of the whole blood.

Experimental Cancer Studies.—Tissue cells of epithelial type are shown by Compton to possess a high degree of vital resistance to the action in vitro of pure glycerin on them, cancer cells being utilized for the demonstration. It is established that the latter can support contact for half an hour with glycerin without their capacity for subsequent reproduction being affected—indeed, without the least sign of devitalization. Further, experiments are detailed which confirm that glycerin is endowed with greater toxicity for bacteria than for tissue cells: in that, after glycerin treatment, tumor cells, as representative tissue cells, survive in vivo while bacteria disappear; and use has been made of this property to solve an important problem in cancer research—namely, the successful propagation by transplantation of the ulcerated tumor. A vast range of usefulness appears incidentally to stand revealed for glycerin in surgery, especially as concerns plastic surgery and grafting operations.

Medical J. Australia, Sydney

2: 141-174 (July 30) 1927

Pyelitis in Children. E. H. M. Stephen.—p. 142.
Pyelitis Complicating Pregnancy. F. B. Craig.—p. 143.
Pyelitis. R. K. L. Brown.—p. 145.
Renal Lithiasis. R. K. L. Brown.—p. 148.
*Recurrent Inguinal Hernia. H. C. R. Darling.—p. 151.
Acute Lymphatic Leuchemia, Possibly Aleuchemic. T. E. Green.—p. 158.
Paget's Disease of Skull. D. Cahalan.—p. 160.

Recurrent Inguinal Hernia.—In Darling's opinion the cure of hernia must depend on the rectification of the various anatomic defects present, and any attempt to deal with all types of inguinal hernia by a standardized operation is wholly to be deprecated.

Acta Dermatologica, Kyoto, Japan

9: 507-613 (June) 1927

Bacteriologic Studies of Impetigo: I. Impetigo Vulgaris. M. Aochi.—p. 539.
Phagocytosis of Epithelium. S. Ishikawa.—p. 550.
*Spirochaeta Pallida in Lymph Glands in Earlier Stage of Frambesia. Y. Ikegami.—p. 558.
Changes in Spinal Fluid in Early Stage of Syphilis. B. Tashiro.—p. 559. C'td.

Spirochetes in Lymph Gland in Frambesia.—Ikegami made smear examination from the secretion of excised glands from twenty-one cases of frambesia in the island of Saipan. The result was positive in five out of eleven cases in the primary stage; it was vegetative in ten cases in the secondary stage. Histologic examination by Levaditi's method gave a positive result in only one case, spirochetes being found in the connective tissue part of the gland. Two out of five cases presenting spirochetes in the gland gave a positive Wassermann reaction.

Chinese Journal of Physiology, Peking

1: 235-344 (July) 1927

*Rôle of Platelets in Blood Clotting. C. A. Mills.—p. 235.
*Influence of Electric Current and Peptone on Blood Platelets and Clotting. C. A. Mills.—p. 245.
Clotting Properties of Pure Blood and of Pure Plasma. C. A. Mills.—p. 249.
Influence of Meals on Acutely Denervated (Viviperfused) Stomach. R. K. S. Lim, H. Necheles and H. C. Hou.—p. 263.
Toxicologic Study of Ephedrine and Epinephrine. J. E. Nadler.—p. 271.
Denaturation of Proteins: IV. Effect on Antigenic Properties of Egg Albumin. S. Wu, C. Tenbroeck and C. P. Li.—p. 277.
Pseudo-Ephedrine from Chinese Ephedra. B. E. Read and C. T. Feng.—p. 297.
*Changes in Golgi Apparatus of Gastric Gland Cells in Relation to Activity. W. C. Ma, R. K. S. Lim and A. C. Liu.—p. 305.
Partition of Serum Calcium into Diffusible and Nondiffusible Portions. S. H. Liu.—p. 331.

Rôle of Platelets in Blood Clotting.—Mills asserts that mammalian blood platelets contain active tissue fibrinogen and free cephalin. They do not contain prothrombin or thrombin. It is apparent that it is the tissue fibrinogen content of the platelets that accounts for their ability to cause clot retraction. By their content of tissue fibrinogen and free cephalin, blood platelets are brought into line with cellular cytoplasm in all parts of the body. A previously published diagram of the blood clotting mechanism is verified as regards the rôle of the platelets in physiologic clotting. They initiate clotting by liberating tissue fibrinogen, and stimulate the later phases of clotting by supplying active cephalin.

Influence of Electricity on Platelets and Clotting.—Mills states that passage of an electric current through blood or plasma containing platelets accelerates clotting, whether the blood is freshly drawn, or citrated and recalcified. With platelet-free plasma no such effect is seen. Witte peptone, dissolved in 0.9 per cent sodium chloride, markedly retards clotting of freshly drawn blood, or of citrated and recalcified blood or plasma, so long as platelets are present. Peptone is without such effect when platelets are absent. Peptone is without effect after the platelets have disintegrated in plasma, or when tissue fibrinogen is added to platelet-free plasma. Mills concludes, therefore, that the electric current acts by hastening platelet disintegration, and the inhibitory effect of peptone in vitro is an inhibition of platelet disintegration.

Golgi Apparatus in Oxyntic Cells of Stomach.—As osmiophil substance, occurring as discrete fine granules or as a reticulum formed by aggregated granules, was demonstrated by Ma, Lim and Liu in oxyntic cells by a modified Kopsch-Kolatschev method. This substance is believed to correspond to the Golgi apparatus. In its reticular form, it appears to be lipoid contained within the secretory canaliculi; correlation with the distribution of mitochondria suggests that the discrete form passes into the reticular when the cell becomes active. It is suggested that the Golgi material is the lipoid or fatty component of mitochondria, which becomes demonstrable on dissociation of the mitochondrial substance.

Kyoto Med. Soc. Journal, Kyoto, Japan

1: 22-36 (July) 1927

Experimental Investigation of Hormone of Digestive Tract, Especially of Stomach and Intestine. S. Ochi.—p. 22.
Studies of Neuroglia Fibers. I. Matano.—p. 24.
*Changes in Blood Picture Following Intravenous Injection of Trypan Flavine Solution. M. Sugano.—p. 26.
*Effect of Mechanical Irritation, Especially Restraint of Needle Prick on Calcium Content of Blood of Normal Rabbits. A. Kamada.—p. 27.
Equilibrium Between Carbon Dioxide and Blood. Y. Katsu.—p. 29.
Pathology of Rice Sickness (Polyneuritis) Changes in Nerve Endings in Heart Muscles in Pigeons. K. Nakamoto and I. Kasahara.—p. 30.
*Content of Cholesterin in Blood in Cases of Various Internal Diseases. K. Ito and K. Kitamura.—p. 32.
*Tuberculoma of Root of Tongue. T. Toyama.—p. 33.
*Acanthosis Nigricans. M. Takuwa.—p. 34.
Climate and Body Temperature. N. Kitamura.—p. 35.

Changes in Blood Following Trypan Flavine Injections.—Following intravenous injection of a trypan flavine solution, Sugano noted a leukocytosis, especially an increase in polymorphoneutrophils, a bactericidal action and a favorable influence on antibody formation. No injurious action, cumulative effect or tendency to habituation was observed.

Experimental Hypercalcemia.—By means of restraint of animals Kamada induced hypercalcemia, but not when the animal was anesthetized. Repetition of restraint experiments gradually nullifies the occurrence of hypercalcemia. Even after release from restraint, some increase in calcium occurs.

Cholesterin Content of Blood.—Ito and Kitamura found that the cholesterin content of the blood was increased in diabetes mellitus and in patients who give a positive Wassermann reaction. It remains almost unchanged in pleurisy, peritonitis and pulmonary tuberculosis. It decreases in cases of the diseases of the gall ducts and liver, phosphorus poisoning, anemia and nephritis. In the acute infectious diseases except pneumonia, it increases somewhat during the fever period. On the contrary, it decreases in the latter case markedly and recovers its normal value after the fever has gone down and other symptoms have disappeared.

Tuberculoma of Root of Tongue.—Toyama reports two cases of typical tuberculoma of the base of the tongue in persons, aged 54 and 49 years, respectively. Tubercle bacilli were found in the lesions.

Acanthosis Nigricans and Stomach Cancer. — Takuwa reports a case of scirrhus carcinoma of the stomach with an associated acanthosis nigricans. The skin lesion became markedly regressive following removal of the carcinoma. Basal metabolism was high, sugar tolerance was lowered, but blood sugar was increased in amount.

Annales de Médecine, Paris

22: 121-248 (July) 1927

*Prolonged Insulin Treatment. M. Labbé.—p. 121.
*Myeloneuromyopathic Form of Kussmaul's Disease. G. Marinesco and S. Draganesco.—p. 154.
Histopathologic Study of "Peripheral Form" of Epidemic Encephalitis. M. Péhu and J. Dechaume.—p. 172.
*Blood in Typhoid Fever. J. Chalier and M. Morel.—p. 189.
Branch Block and Ventricular Block. I. Mahaim.—p. 213.
*Mechanism of Propagation of Organic Murmurs of Heart and Duroziez's Double Femoral Murmur. V. Mandru.—p. 242.

Prolonged Insulin Treatment.—After from two to three years, of twenty-four patients treated by Labbé with insulin, twelve are dead and twelve are living. Of the twelve fatal cases, four, perhaps five, terminated in coma, in three death was due to suppuration and infection, in four to pulmonary tuberculosis. In spite of the amelioration of the general condition in diabetics treated by insulin, they remain delicate subjects exposed to serious complications. Prolonged treatment with insulin does not prevent the gradual development of severe diabetes, but it retards it considerably. The duration of severe diabetes has been much increased by the use of insulin. Six cases reported by Labbé lead him to hope for cure, perhaps through functional regeneration.

Myeloneuromyopathic Form of Kussmaul's Disease.—The patient had fever, lost weight and suffered intermittently from gastro-intestinal disturbances. Kussmaul's disease developed through six months, when the patient died of cachexia. On histologic examination there were found lesions of arteritis nodosa in an advanced stage of sclerous panarteritis and parenchymatous lesions in the viscera, muscles and nerves. There were alterations of the vasculoneurogliar type in the central nervous system. Usually neuraxial alterations are absent or of a different character in this affection. Probably the chronicity of the disease was responsible for the lesions described, which are perhaps the result of vascular alterations.

Blood Cells in Typhoid Fever: Leukocytic Formula: Hemoculture and Sero-Agglutination Data.—In typhoid there is usually a more or less intense anemia, especially at the time of defervescence. Contrary to the classical opinion, typhoid is not one of the leukopenic diseases. When there is leukopenia, it is usually not marked, showing perhaps 5,000 white cells. A hyperleukocytosis at the onset is a favorable prognostic sign. A slight myelocytosis (1 to 2 per cent) is relatively frequent; there is initial diminution, then gradual increase of lymphocytes; very noticeable increase of medium mononuclears, stability in the proportion of large mononuclears; the number of polymorphonuclears may be normal or increased at the beginning of the disease, but very soon this condition yields to a mononucleosis, sometimes extreme. There is initial disappearance of eosinophils, which reappear at defervescence. In normal typhoid it seems that the eberthian septicemia, with characteristic positive blood culture, brings with it polynucleosis as a leukocytic manifestation. On the other hand, after disappearance of the septicemia, the positive sero-agglutination is accompanied by mononucleosis; and the increase or decrease of the rate of agglutination and the proportion of mononuclears is nearly always in the same direction, but not always parallel and in the same proportions.

New Hypotheses on Mechanism of Propagation of Organic Murmurs of Heart and on Double Femoral Murmur of Duroziez.—In mitral insufficiency the systolic wave which passes into the auricle cannot make the walls of the auricle vibrate, because the latter is in diastole during the systole of the ventricle. The mitral valves, on account of their insertion, and especially on account of the papillary muscles, are adherent to the walls of the ventricles. These walls, being in a sufficient degree of tension because of the systole, vibrate with the valves. In aortic insufficiency, the murmur is produced by the diastolic ebbing of the blood in the ventricle. The wave makes insufficient aortic valves vibrate. This murmur is heard over only a limited area, at its seat of production, because the walls of the ventricle in diastole being flaccid cannot have the degree of tension necessary for the communication of the vibrations to the entire ventricle. The same is true of the wall of the aorta, the tension of which diminishes suddenly because of the backing up of the blood in the ventricle. In aortic stenosis the vibrations of the aortic valves are communicated to the entire ventricle and to the walls of the aorta, in such a way that the murmur is heard from the left axilla to a point under the right clavicle, for the reason that during systole, the walls of the ventricle are at a sufficient tension so that the vibrations of the valves are communicated to them; in the same way, the walls of the aorta are distended more and more with the progress of the systole, so that they also are at sufficient tension to vibrate. In aortic insufficiency, because of the systole of the vessels of the base of the heart, a double reflux is produced. From their central portion the blood flows back toward the vessels of the rest of the organism, producing dicrotism, the double sound and the double murmur, all consequences of this second increase of tension.

Archives des Maladies de l'App. Digestif, etc., Paris

17: 601-718 (June) 1927

*Influence of Sodium and Calcium Salts on Glycemia. M. Labbé et al.—p. 601.
*Pseudotuberculosis of Cholecystic Origin. M. Chiray and F. Triboulet.—p. 609.
Painful Points in Ulcer of Stomach, Appendicitis and Gallbladder Diseases. S. Mintz.—p. 616.
Movements of Duodenum. A. Borcesco et al.—p. 630.
Flagellates of Human Intestine. Carrieu and Rambault-Simon.—p. 658.

Influence of Sodium and Calcium Salts on Glycemia.—The influence of sodium and calcium ions on glycoregulation varies according to the particular acid in combination with them. The sodium ion combined with carbonate and lactic acid ions increases glycemia in the normal or in the diabetic organism; with the phosphate ion sodium produces hyperglycemia neither in the healthy nor in the diabetic subject; if the diabetic be given glucose along with the monometallic and bimetallic phosphates, the hyperglycemic reaction is less strong than with glucose alone; the preponderance of action is then due to the phosphate anion rather than to the sodium cation. Calcium salts, in the form of chloride or lactate, administered in diabetes produce a hypoglycemia resulting from the action of the calcium cation rather than from the chlorine or the lactic acid. The action of calcium is more impressive when the metal is combined with lactic acid, which is capable, after transformation into glyceric aldehyde, of furnishing glucose. Several hypotheses are offered to explain the influence of the alkali and alkaline-earth salts on glycoregulation. The administration of these salts (those of calcium and the alkaline phosphates) favors the diminution of glycemia and glycosuria and induces a better utilization of the carbohydrates.

Pseudotuberculosis of Cholecystic Origin.—In numerous instances a chronic disturbance of the digestive tract simulates the beginning of a pulmonary tuberculosis. A chronic sclero-atrophic calculous cholecystitis is accompanied in its slow evolution by such general symptoms as fatigue, loss of weight, slight and intermittent fever. This is also true of cholecystitis without stone. Functional disturbances, analogous to those caused by diseases of the respiratory tract, may be the only other clinical manifestation of a chronic disturbance of the gallbladder. Thoracic pains are quite frequent. cough is less so and dyspnea is rare. Chronic cholecystitis without stone is most frequently at the root of the disturbance and the patients in whom the diagnosis must be made are usually adolescents or young adults.

Archives Méd.-Chir. de l'App. Respiratoire, Paris

2: 1-96 (April) 1927

*Respiratory Modifications of Arterial Tension. C. Lian and Kaplan.—p. 1.
Technic and Operative Results of Extrapleural Thoracoplasty for Pulmonary Tuberculosis. A. Bonniot.—p. 25.
Progress in Pulmonary Physiology. J. Roux.—p. 42.

Respiratory Modification of Arterial Tension.—If in a patient the disappearance of arterial sounds on inspiration persists when one diminishes the counter pressure by 1 cm. of mercury and more, one may state that there is a pathologic phenomenon. By comparing on several successive days the intensity of the anisophonosphygmia presented by a patient

with cardiac insufficiency, one may control the evolution of the disease and follow the effects of medication. If the arterial tension is to be determined by the auscultatory method, the first step of the procedure should be repeated two or three times, so as to ascertain precisely at what pressure the first arterial sounds are heard. The brassard should be left at this pressure for a few seconds, so that these first arterial sounds may be analyzed carefully. The same attention is given to each new stage of the decompression, at first by 0.5 cm. and then 1 or 2 cm. of mercury. This phonometry is by far the most practical procedure to bring to light anisosphygmias. It is much easier of interpretation than the oscillometric method.

Bulletin de l'Académie de Médecine, Paris

98: 117-167 (July 26) 1927

Chickenpox Orchitis. J. Sabrazès.—p. 122.
*Pathogenic Properties of B C G Tuberculosis Vaccine. J. Lignières. —p. 127.
Pseudo-Icterogenous Spirochete. A. Michaïloff.—p. 146.
*Development Cycle of Treponema Pallidum. C. Levaditi et al.—p. 149.
*Action of Bismuth on Leptospira Icteroides. R. Sazerac et al.—p. 152.
Transmission of Visible and Ultraviolet Rays Through Quartz Cylinders of Variable Orientation. L. H. Dejust.—p. 154.
Gastric Disturbances of Latent Appendicular Origin. C. P. Caplesco. —p. 156.
*Nitrogen and Thyroid in Treatment of Edematous Syndrome with Albuminuria. H. Chabanier et al.—p. 161.

Pathogenic Properties of B C G Tuberculosis Vaccine.—The tubercle bacilli (grown on potato treated with glycerin and bile) of Calmette and Guerin, which constitute their B C G vaccine, were shown to be really attenuated. Passage through the guinea-pig and the calf did not modify them so that they would produce lesions of tuberculosis. Their permanence in the organism and their fortifying action seem to be of longer duration than was thought. In cattle the thermic reaction which follows the monthly subcutaneous injections of tuberculin becomes quite rapidly negative when the B C G is living and active in the local lesion of the dewlap. In guinea-pigs it seems that specially sensitive animals may suffer injury to their health through B C G. In spite of the remarkably fixed attenuation of the bacillus B C G, it is prudent to continue to maintain it on the bile medium. It would be wrong to consider it, in all cases, absolutely harmless; hence, it is wise to avoid its use when the tuberculous contagion is not seriously to be feared.

Development of Cycle of Treponema Pallidum.—The authors offer as explanation for the absence of treponemas from the popliteal glands of rabbits inoculated with syphilis, that the treponema represents only one phase of the development cycle of the syphilitic virus. In syphilomas on the way to spontaneous cure and in chancres of treated animals, spirochetes presenting all phases of an involutional process, including the formation of argentophile granulations, were found included in the cytoplasm of the fibroblasts. These almost ultramicroscopic forms would represent the prespirochetal stage of the virus; they would be capable of insuring the preservation of the germ in the tissues during the latent periods of the disease and would constitute virus reserves that persist in spite of antisyphilitic treatments.

Action of Bismuth on Leptospira Icteroides.—Sodium tartrobismuthate possesses a remarkable, curative power in *Leptospira icteroides* infection in the guinea-pig. The action of bismuth on *L. icteroides* and *Spirochaeta icterohaemorrhagiae* appears to be identical. It is not illogical to suppose that icterohemorrhagic spirochetosis and yellow fever are different forms of infection provoked by the same original virus, which has undergone still undetermined modifications. Hence, the possibility of treating yellow fever successfully with bismuth compounds.

Nitrogen and Thyroid in Treatment of Edematous Syndrome with Albuminuria.—From a number of cases, four of which are reported, the authors conclude that the high nitrogen diet (as long as it does not modify the renal function estimated by the ureosecretory constant) associated with intensive and prolonged thyroid treatment is capable of giving excellent results in the edematous syndrome, known as renal, even in cases in which dechloruration has failed.

Bull. de la Société Médicale des Hôpitaux, Paris

43: 1001-1097 (July 7) 1927

Primary Mumps Meningitis and Nervous Sequelae. E. Joltrain et al.—p. 1002.
Case of Unilateral Thoracic Striae. J. Comby.—p. 1008.
*Tonsillitis with Monocytosis. P. Carnot et al.—p. 1009.
*Treatment of Herpes by Intravenous Injections of "Sulphur" Water. R. Bénard and E. Joltrain.—p. 1013.
Juvenile Diabetes Complicated by Pulmonary Tuberculosis Treated by Insulin and Artificial Pneumothorax. Le Noir and Scherrer.—p. 1020.
Biochemical Study of Uremia. M. Labbé et al.—p. 1026.
*Muscular Uremia and Amyloid Sclerosis. P. Merklen et al.—p. 1034.
Bronchiectasis and Mediastinal Pleurisy. J. Tapie and R. Sorel.—p. 1039.
Congestive Edemas of Lung with Friedlander's Pneumobacilli. G. Caussade and A. Tardieu.—p. 1044.
Posterior Mediastinal Pleurisy Symptomatic of Bronchiectasis. A. Gendron and L. Lévesque.—p. 1059.
*Attacks of Hemoglobinuria in Chronic Nephritis. A. Coyon et al.—p. 1065.
Treatment of Gonorrheal Arthritis with Gonococcal Lysin Vaccine. C. Flandin et al.—p. 1071.
Reinforcement of Immunity by Injection of Starchy Substances (Tapioca). J. A. Sicard et al.—p. 1086.
Tuberculous Meningitis of Long Duration. Laignel-Lavastine et al.—p. 1093.

Case of Tonsillitis with Monocytosis.—The evolution of the case described by Carnot, Weissenbach, Boltanski and Weill was longer than usual in this disease, the fever lasting three weeks. The general condition was also more affected. The hyperleukocytosis was due exclusively to the increase in the number of monocytes, the polymorphonuclears and the nongranular and lymphocytic mononuclears being diminished in numbers relatively and absolutely. The fusospirillary combination predominating in the flora of the tonsillar ulceration has at times been observed in tonsillitis with monocytes.

Treatment of Herpes and Herpes Zoster with Intravenous Injections of "Sulphur" Water.—Of fourteen cases of herpes and herpes zoster treated with intravenous injections of "sulphur" water (Uriage water), there was a clearly favorable effect in eleven cases. Uriage water contains 6 Gm. per thousand of sodium chloride, 3 Gm. per thousand of calcium, manganese and sodium sulphates and 7 volumes per thousand of hydrogen sulphide.

Muscular Uremia and Amyloid Sclerosis.—The usual symptoms, azotemia, somnolence, digestive disturbances and hypothermia, were present in the case reported. Muscular phenomena, gradually becoming more emphasized over a period of three days, should be classified among the azotemic manifestations. This case was characterized by the coexistence of a urinary secretion of the amyloid type with clinical signs of azotemic nephritis and 3.17 Gm. of urea. Absence of precipitate after centrifugation furnishes a useful point in diagnosis, indicating an anomaly in the nephritis observed and excluding the idea of an ordinary nephritis grafted on an amyloid kidney. The amyloid kidney is distinguished by the low azotemia and Ambard's constant. In amyloid sclerosis, it is the azotemic syndrome which manifests itself in the classic form.

Attacks of Hemoglobinuria in Course of Chronic Nephritis.—The exitence of renal lesions in patients with attacks of hemoglobinuria may be considered as constant. Some authors have concluded that there is cell destruction even in the kidney. The rôle of the kidney in the genesis of hemoglobinuria has been variously estimated. In the case reported there was no question as to the hemolytic power of the serum and the fragility of the erythrocytes; however, the hypothesis of renal pathogenesis may be invoked. The patient undoubtedly had extravasations of blood into the kidney, as evidenced by repeated and prolonged hematuria. A mixed pathogenesis may be assumed. Perhaps a glomerular hemorrhage, followed by rapid elimination, would give rise to a hematuria, an interstitial hemorrhage to a hemoglobinuria.

Bull. Soc. d'Obst. et Gynec., Paris

16: 433-511 (July) 1927

Spinal Anesthesia at Broca Hospital. E. Douay.—p. 433.
*Partial Symphyseotomy Versus Low Cesarean Section in Contracted Pelvis. H. Zarate.—p. 436.
Baronaki's Medical Treatment of Cancer. J. G. Berry.—p. 446.

Vulvovaginitis from Oxyuris in Young Children. Powilewicz and Fish. —p. 449.
Syphilitic Chancre of Cervix and Pregnancy. Guyot et al.—p. 452.
Spontaneous Rupture of Ovarian Cyst in Pregnant Woman. Péry et al. —p. 454.
Adnexitis and Vaccinotherapy. Guyot and J. Villar.—p. 455.
Dermoid Cyst of Ovary. Guyot and Dubreuilh.—p. 457.
Epithelioma of Cervix of Endocervical Form with Lucas-Championnière's Gland. Guyot and Dubreuilh.—p. 459.
Peritonization After Hysterectomy. Guyot and Lazaris.—p. 460.
Tuberculosis of Uterus and Adnexa. Goullioud.—p. 461.
Premature Detachment of Normally Inserted Placenta. Planchu.—p. 463.
Indications for Operation in "Adenomyoma" of Uterine Horns. L. Michon and R. Labry.—p. 468.
Florid Form of Vomiting of Pregnancy. Gonnet and Reboud.—p. 472.
Postphlebitic Functional Impotence of Leg Cured by Diathermy. Bouget and Novel.—p. 474.
Intracardiac Injections of Epinephrine. Roume.—p. 475.
Conservative Surgery of Adnexa. De Rouville and Madon.—p. 477.
Risks of Radium Therapy in Uterine Cancers. L. Devèze.—p. 479.
Puerperal Inversion of Uterus. J. Coll de Carréra.—p. 482.
Cardiac Malformation in New-Born. Lévy et al.—p. 485.
Extra-Uterine Pregnancy with Successive Ruptures and Hematoceles. A. Guillemin.—p. 486.
Postoperative Pelvic Serous Collections. A. Guillemin.—p. 487.
Lymphatic Origin of Pelvic Cysts After Castration in Women. A. Hamant and L. Cornil.—p. 488.
Fibroma and Pregnancy of Three Months. L. Grimault.—p. 493.
Low Cesarean Section in Infected Cases. L. Grimault.—p. 494.
Uniovular Twin Pregnancy: Beukiser Hemorrhage: Death of Both Fetuses. Vermelin and François.—p. 500.
Statistics on Early Uterine Retroversion Postpartum. A. Fruhinsholz. —p. 501.
Hematoma of Cord. G. Lévy.—p. 506.
Partial Retroflexion of Four to Five Months' Pregnant Uterus. Girardin. —p. 508.
Enucleation of Fibromas. Reeb.—p. 510.

Partial Symphyseotomy Versus Low Cesarean in Case of Contracted Pelvis.—Twenty symphyseotomies were performed by Zarate's students on unselected cases. The absolute indications for symphyseotomy are: contracted pelvis in multiparae with dilated or dilatable cervix, and the fetus not suffering injury, and infection in primiparae with dilated or dilatable cervix, but not when the operation is to be followed by the use of forceps or version. In low cesarean section, maternal mortality is never below 3 per cent. Symphyseotomy is so simple and so safe that it does not cause a single death: with this technic one may expect, in contracted pelvis, 80 per cent of spontaneous deliveries. The test of labor should be insisted upon. In the discussion Cathala said that he had used subcutaneous symphyseotomy sixteen times and considered it an excellent operation.

Gynécologie et Obstétrique, Paris

15: 321-400 (May) 1927

*Surface Tension of Urine: Clinical Value in Gynecology. A. Mandelstamm.—p. 321.
*Probable Syphilitic Origin of Certain "Albuminurie" Placentas. A. Fruhinsholz.—p. 329.
*Basal Metabolism in Pregnancy. A. Peralta Ramos and M. Schteingart. —p. 333.
Early Surgical Treatment of Eclampsia. J. C. Llames-Massini.—p. 340.
Transparent Aseptic Dressings. H. Althaufer.—p. 362.
Models and Manikins for Teaching Gynecology. R. de Seigneux.—p. 372.
Treatment of Complete Genital Prolapse in Aged Women. Laurentie. —p. 379.

Surface Tension of Urine: Its Clinical Value in Gynecology.—In the course of a physiologic reaction process following laparotomy (plastic exudate, absorption of ligatures, resorption of effused blood, etc.), the elimination by the renal filter of decomposition products of albumins produces a lowering of the surface tension of the urine which, however, lasts a shorter time than the acceleration of the sedimentation of the erythrocytes. When there are complications during the postoperative period (suppuration of the wound, exudates, etc.), the sedimentation is greatly accelerated. At the same time, the return of the high stalagmometric coefficient to normal is retarded. Being a very sensitive method, the examination of the surface tension of the urine has an advantage over the sedimentation rate of the erythrocytes, since it does not require repeated puncture of the vein, often unpleasant to the patient.

Probable Syphilitic Origin of Certain "Albuminurie" Placentas.—The case reported seems to be an argument in favor of the lack of relation between the "albuminuric" placenta and albuminuria, on the one hand, and in favor of the connection of certain of these cases with syphilis. After observing in a patient two abortions at the seventh month, with a macerated fetus, very small for the length of pregnancy, and a small selerotic placenta, Fruhinsholz instituted vigorous antisyphilitic treatment (the Wassermann reaction being strongly positive), and the third pregnancy terminated in the normal delivery of a healthy child. The placenta also was normal in appearance, except for a few infarcts.

Basal Metabolism in Pregnancy.—Basal metabolism was studied in seventy women, at different periods of pregnancy. The results obtained with the Roth apparatus are tabulated. The values are above normal in 61 per cent of the cases, normal in 33 per cent, and below normal in 6 per cent. The increase nearly always begins in the second half of pregnancy. In most cases the pulse was between 80 and 116. No close relation between basal metabolism and pulse was discovered. In seven patients in whom the basal metabolism was examined during pregnancy and after confinement, there was a sudden drop to normal between the second and the fifteenth days of the puerperium. The increase of caloric expenditure is a physiologic necessity which must compensate for the energies expended in forming a new organism and in assuring its nutrition, growth, movements and the functioning of its organs.

Journal de Chirurgie, Paris

30: 1-128 (July) 1927

Anatomicopathologic Basis for Surgery of Sympathetic? R. Leriche and R. Fontaine.—p. 1.
*Hemostasis in Goiter Operations. S. Rolando.—p. 10.

Hemostasis in Goiter Operations.—To ligate the inferior thyroid and to safeguard the recurrent nerve as much as possible from operative lesion, Rolando chooses that portion of the artery (generally about 2 cm. from the carotid tubercle) which bends inward to traverse the thyroid fascia or external capsule of the goiter and rejoin the corresponding thyroid lobe. He reserves preventive ligature for diffuse or retrosternal goiters.

Journal d'Urologie Médicale et Chirurgicale, Paris

24: 1-96 (July) 1927

*Lithogenous Action of Staphylococci. Pillet.—p. 5.
Latent Gonococci and Spermoculture. P. Barbellion.—p. 36.
Tuberculosis in Polycystic Kidney. Uteau.—p. 50.
Multiple Fibromas of Vaginal Tunic. P. Stricker and A. Franck.—p. 53.
New Model of Catheter for Prostatic Cases. H. Blanc.—p. 55.

Lithogenous Action of Staphylococci.—If a virulent staphylococcus is sown in filtered, aseptic, acid urine, after some days in the incubator, at 37 C., alkalinity is reached and numerous crystals of ammonium magnesium phosphates are precipitated. On the other hand, colon bacilli, which preserve the urinary acidity for a long time, sown in aseptic urines, prevent the precipitation of phosphates or at least retard it for some time. Numerous experiments are reported. A massive, but fleeting, infection in normal urine may thus be the origin of phosphatic calculi in childhood or adolescence.

Médecine, Paris

8: 645-720 (June) 1927

*Physical Treatment of Goiter. P. Sainton.—p. 660.
Pigmentation and Ultraviolet Rays. J. Verne.—p. 666.
Cholecystography. P. Cottenot.—p. 676.
Results of Postoperative Preventive Radiography in Treatment of Cancer of Breast. Haret and Lifchitz.—p. 681.
Interpretation of Abdominal Air Spaces in Roentgenology. H. Béclère and P. Porcher.—p. 687.
*Treatment of Fibromas. Y. L. Wickham.—p. 692.
*Photosensitization in Pathology. A. C. Guillaume.—p. 700.
Pyloric Disease of Infant. M. Péhu. Supplement.—pp. 3-48.

Treatment of Exophthalmic Goiter with Physical Measures.—Electricity and radiotherapy are the principal physical agents used in treatment of nontumorous exophthalmic goiter. Radium is very rarely used. Actinotherapy and hydrotherapy play accessory rôles. Heat should have an important place.

Galvanofaradization is the method of choice; it is not dangerous and improves most patients. Radiotherapy is effective in a certain number of cases and its advantages outweigh its difficulties.

Treatment of Fibromas.—In case of slightly doubtful diagnosis of complicated or calcified fibroma, or in presence of an infection, however slight, or if the fibroma is very large operation should be done. When the diagnosis is certain, when there is a contraindication to operation, even slight, local or general, or when the patient, in spite of advice refuses surgical intervention, the use of roentgen rays and radium is fully justified. Each case of fibroma, however, demands individual treatment.

Morbid Photosensitivity and Photosensitization.—In certain persons, subject to morbid photosensitivity, the abnormal sensitivity appeared after the introduction into the organism of certain substances, e. g., certain vegetable foods (maize, clover) certain therapeutic substances (tinctures used against infection) or from the handling of certain industrial products (those derived from oil, for example). The symptoms of this photosensitization are produced by radiations of the visible spectrum, on which the phenomenon of photosensitization confers biologic properties identical with those belonging to the ultraviolet rays. The modification of the normal action of visible rays is due to the fact that, under the action of photosensitizing substances, rays usually passing through are totally absorbed by the cells of the layer of Malpighi and, being absorbed, change the cells. Some fluorescent substance is usually to blame in any particular case of photosensitization—acridine (injected), coal and its derivatives (handled), industrial or therapeutic dyes. Pellagra or pseudopellagra of alimentary origin is sometimes the cause. An endogenous morbid photosensitivity may be due to derivatives of hemobiliary pigments: witness photosensitivity in icterus and in the hematoporphyrinuric conditions. Sulphonmethane (sulphonal) and substances chemically related to it may indirectly produce exo-endogenous photosensitization.

Nourrisson, Paris

15: 193-256 (July) 1927

Bronchopulmonary Lesions in Asthmatic Child. V. Zerbino.—p. 193.
Diphtheritic Coryza and Diphtheria Without False Membranes. M. Chevalley.—p. 213.
*Duodenal Stenosis in Infant. V. Veau and G. L. Hallez.—p. 244.

Case of Duodenal Stenosis in Infant.—The late appearance of the vomiting (the twentieth day) seemed to eliminate atresia and even extreme stenosis of the duodenum in the case here reported. The vomitus was yellow or green, pointing to the ampulla of Vater as the seat of the disturbance. Radiologic examination revealed an obstruction of the third portion of the duodenum. At operation, Treitz's muscle was freed. It was ascertained that the duodenum had been strangulated between the spine and the abnormally stretched mesentery. After seven weeks, during which the child gained, vomiting and diarrhea appeared and death followed. Occlusion on this occasion had been caused by a hernia of the small intestine behind a newly formed band. The peritoneal breach should have been closed with a catgut stitch. A subcolic wound may create a band which may readily cause occlusion. In analogous cases every precaution should be taken to avoid gastro-enterostomy, which is difficult and dangerous for the infant.

Paris Médical

64: 1-36 (July 2) 1927

Diseases of Heart and Blood Vessels in 1927. P. Lereboullet and J. Heitz.—p. 1.
*Diagnosis of Abdominal Aortitis. H. Vaquez and E. Donzelot.—p. 16.
*Heart in Sclerosis of Pulmonary Artery. E. Bordet.—p. 20.
Muscular Exercise and Rhythm of Heart. L. Merklen.—p. 22.
Flutter and Complete Arrhythmia. Géraudel.—p. 26.
Blood in Malignant Lymphogranulomatosis. C. Aubertin.—p. 30.

Diagnosis of Abdominal Aortitis.—Complicated abdominal aortitis may be revealed by two kinds of symptoms: local pain and remote pain, whether peripheral or visceral. These signs have only a relative value since the local pain may dominate the picture or may be lacking entirely, and the remote pain may be caused by some alteration which does not directly involve the abdominal segment of the aorta. Pure abdominal aortitis may express itself clinically by direct and by indirect signs. The more important direct signs are pain, enlargement, mobility and incurvation of the aorta. The indirect signs offered by various writers have been discounted by Vaquez and Donzelot. Radiology does not aid diagnosis.

Heart Image in Sclerosis of Pulmonary Artery.—Whether the sclerosis be primary or secondary, the shadow of the heart is in both cases spherical or ball shaped. It is not at all like the triangular or transverse form occurring in dilatation of the right ventricle; it has some similarity to the heart "en sabot" met in congenital stenosis of the pulmonary artery, which is the sign of localized hypertrophy of the right ventricle. The modification of the organ is anatomically the same in pulmonary stenosis as in sclerosis of the pulmonary artery; however, if the shape of the heart is typical in the first case (sabot), it is not in the second. One might easily take it for a picture of great hypertrophic dilatation of the left ventricle. To avoid error, one must watch the clinical signs as well. These are usually limited to dyspnea and cyanosis. In every instance in which sclerosis of the pulmonary branches is apparent, the radiologist must, in the absence of valvular lesions and of aortic sclerosis, attribute the excessive development of the organ solely to hypertrophy of the right ventricle. Sketches illustrate a method of tracing diameters of the heart picture and measuring these.

Presse Médicale, Paris

35: 921-936 (July 23) 1927

*Acidosis in Nephritis. F. Rathery et al.—p. 921.
*Treatment of Roentgen-Ray Epithelioma. E. Marquès.—p. 924.
Treatment of Furuncles of Upper Lip. J. Sénèque.—p. 925.
Critical Temperature in Cooking. E. Pozerski.—p. 931.

Acidosis in Nephritis.—Acidosis, frequently encountered in acute or chronic nephritis may be made manifest by investigation of the alkali reserve, but the sodium bicarbonate test for this purpose is more sensitive. The lowering of the alkali reserve often goes hand in hand with modifications of the azotemia; with raised azotemia there is often a lowered alkali reserve. All of the authors' patients who had an alkali reserve of 20 died in a few days. The examination of the alkali reserve shows the intensity of the phenomena of acidosis. The single examination of the urinary p_H made in the morning, fasting, is insufficient. The p_H of several of the cases reached and exceeded 7.

Epithelioma in Radiologist Cured by Bordier's Method.—The lesion, diagnosed as an acanthoma, situated at the extremity and on the left side of the nose, measured about 10 mm. in diameter. After local anesthesia, Bordier undertook diathermic coagulation of the epithelioma. There was perfect cicatrization with excellent result.

Beiträge zur klinischen Chirurgie, Berlin

140: 1-164, 1927

Chemical Wound Antiseptics. C. Brunner and W. Silberschmidt.—p. 1.
Permeability of Gallbladder Wall. W. Gundermann.—p. 26.
*Ligation of Anterolateral Column. O. Hahn.—p. 32.
Perforated Ulcer of Large Intestine. W. Boss.—p. 40.
Sarcoma of Breast; Relation to Fibrosis and Benign Tumors. M. Biebl.—p. 52.
Osteopathia Hyperostotica—Mélorhéostose. P. Zimmer.—p. 75.
Surgical Treatment of Osgood-Schlatter's Disease. C. T. Willich.—p. 86.
Juvenile Localized Fibrous Osteodystrophy with Tumor Formation. H. Hellner.—p. 92.
Isotonic Solutions of Procaine Hydrochloride and Sodium Chloride. A. Pfefferkorn.—p. 108.
Healed Fat Necroses of Pancreas. H. Sprengell.—p. 117.
Pressure Pain in Mesentery in Appendicitis. M. Cohn.—p. 123.
Osteopathia Cretinosa Scapulae. W. Haumann.—p. 136.
Connection Between Appendicitis, Cholecystitis and Peptic Ulcer. H. M. Hinrichsen.—p. 149.

Ligation of Anterolateral Column.—In a case reported by Hahn, in which severe neuralgia in the right lower extremity resulted from squamous cell epithelioma, Henle ligated the left anterolateral column of the spinal cord. Pain disappeared entirely, but appeared in the other limb three months later, when the tumor or its metastases had begun to involve the other side. This, Hahn states, teaches that when the

cause of the pain is a lesion that may spread to the other side, conduction should be interrupted in both anterolateral columns.

Deutsche Zeitschrift für Chirurgie, Leipzig

205: 1-144 (July) 1927

*Operation in Pulmonary Embolism. A. W. Meyer.—p. 1.
Inhalation of Carbonic Acid Gas: Apparatus. A. Dzialoszynski.—p. 22.
Intracardiac Injections. E. Gohrbandt.—p. 28.
Leiomyomas of Mammary Gland. H. Schauder.—p. 58.
Enterocystoma. A. Sohn.—p. 69.
*Cholecystography. V. Orator.—p. 82.
Contrast Mediums in Cholecystography. V. Orator and Walchshofer.—p. 86.
*Operative Treatment of Gastric Crises. F. Mandl.—p. 92.
Surgical Treatment of Gastro-Intestinal Crises. F. Stein.—p. 111.
Perforation of Peptic Jejunal Ulcer into Abdominal Cavity. F. Spath.—p. 113.
Ruptures in Vicinity of Duodenojejunal Flexure. G. Erdély.—p. 120.
Carcinoid of Small Intestine Causing Occlusion. J. Heine.—p. 126.
Actinomycosis of Rectum. E. Risak.—p. 129.
Esophageal Diverticulum as Sequel of Injury. Bertrams.—p. 134.
Ulcer Question; Correction. G. E. Konjetzny.—p. 139.
Reply. V. Orator.—p. 143.

Cure of Embolism of the Pulmonary Artery by Trendelenburg's Operation.—Meyer reports two successful operations for pulmonary embolism. He used Trendelenburg's procedure with certain modifications in methods and instruments, which he describes and illustrates; pneumothorax is avoided.

Cholecystography in Patients with Ulcer.—In 60 per cent of patients with gastric or duodenal ulcer, Orator found defective filling of the gallbladder. In some of these patients the contrast substance was given by mouth, in others intravenously. The periodic flow of bile into the duodenum, even in the fasting state, due to the hypersecretion characteristic in ulcer patients, is a probable explanation. The fact lessens the value of cholecystography in differential diagnosis between duodenal ulcer and gallbladder disease.

Operative Treatment of Gastric Crises in Tabes.—Mandl has performed exeresis of the rami cummunicantes in nine cases of gastric crises, bilaterally in six. Although complete cure was not obtained in any case, he believes that the patient with frequent attacks, who has not benefited by internal treatment, should be given this chance. The patient is better nourished and the general condition is improved.

Klinische Wochenschrift, Berlin

6: 1593-1640 (Aug. 20) 1927

Melancholy and Psychopathic Depression. O. Kant.—p. 1593.
*Pathology and Therapy of Spirochetal Diseases. G. Steiner and J. Steinfeld.—p. 1597.
Processes in Growing Cancer Cells. R. Bierich.—p. 1599.
*Ovary and Endocrine System. W. Baer.—p. 1603.
Gallbladder Physiology and Pathology. K. Blond.—p. 1606.
Forssman's Antigen and Antibody. W. Frei and S. Grünmandel.—p. 1608.
Marchionini-Shellac Reaction of Cerebrospinal Fluid. F. Stern.—p. 1612.
Determination of Actual Reaction of Tissues and Secretions. C. Häbler.—p. 1613.
Dependence of Thyroid Function on Sympathetic. L. Asher and O. Pfluger.—p. 1614.
Behavior of Estrus in Parabiosis. H. Zacherl.—p. 1614.
Acid-Soluble Iron in Blood Serum. G. Barkan.—p. 1615.
Scarlet Fever in First Year of Life. F. von Bormann.—p. 1615.
Roentgen-Ray Sterilization of Woman on Account of Extragenital Diseases. C. Holtermann.—p. 1616.

Pathology and Therapy of Spirochetal Diseases.—"Brain spirochetes" cannot be influenced either by brief or by eight-day parabiotic union of an immune with a healthy animal. During the parabiosis of an immune with a normal animal so much immune material has soon passed over to the normal animal, that the latter may be designated as passively immunized. A normal animal passively immunized during a parabiosis is incapable of passing on its immunity to a healthy animal united to it in parabiosis. Histologic investigations have proved that in a short parabiotic union of an immune with a healthy animal, there is a zone in the portion of the normal animal's skin nearest the immune animal in which the immunity action is perceptible.

Place of Ovary in Endocrine System.—Two cases illustrating the influence of the ovary on the external appearance of the woman are noted by Baer. The first patient, aged 25, since a normal delivery two and a half years ago, has had amenorrhea and lack of libido and orgasm. Two photographs show the enormous increase of weight, which was accompanied by sluggish speech and movements. The second patient, aged 23, had never menstruated. The thorax and pelvis are male in appearance. The uterus is 3 cm. long and of the thickness of a lead pencil. A pituitary, taken from a dead child immediately after birth, was implanted in the fatty tissue of the mammary gland of the first patient. Shortly after the operation there was a scanty menstrual bleeding. The result was not permanent, the pituitary being quickly absorbed.

Medizinische Klinik, Berlin

23: 1247-1284 (Aug. 19) 1927

Balneologic and Hydrotherapeutic Treatment of Chronic Joint Diseases. A. Strasser.—p. 1247.
*Treatment of So-Called Cardiospasm. G. Lotheissen.—p. 1249.
Gymnastics for Women. S. Westmann.—p. 1251. C'cn.
Surgery of Mediastinopericarditis. Hanebuth and T. Naegeli.—p. 1253.
Treatment with Autovaccines. M. Friesleben.—p. 1257.
Pathogenesis of Arthritis Deformans. K. Wagner.—p. 1258.
Portal of Infection, Localization, Superinfection and Reinfection in Tuberculosis. A. Sata.—p. 1259.
Carcinoma of Jaw and Cervical Spine. G. Burckhard.—p. 1262.

Treatment of So-Called Cardiospasm.—In cardiospasm, or spasm of the lower part of the esophagus, lasting therapeutic results are obtained only with surgical treatment. The spastic ring must be prevented, by energetic dilation, from drawing together. The introduction of an ordinary sound, even one of the highest number, does not dilate sufficiently. Several bougies may be introduced at once. More comfortable for the patient are special sounds that may be filled with water or that may be made larger by a special mechanism. Lotheissen generally uses Gottstein's dilation sound. One must proceed very slowly and as soon as the patient feels severe pain the operation is stopped. The maximum of dilation must never be forced at the first attempt. When the spastic part is too narrow for any sound, gastrostomy may be undertaken, and sounds used afterward. The sixty patients treated all had more or less widening of the esophagus above the spastic ring.

Monatsschrift für Geb. und Gynäkologie, Berlin

76: 397-482 (July) 1927

*Prescription of Ergot. R. Asch.—p. 397.
Levator Ani in Labor. E. Martin.—p. 400.
Puerperal Sepsis; Localization and Frequency of Metastasis. C. Brügelmann.—p. 404.
Inflammations of Adnexa and Menstruation. H. Hartmann.—p. 419.
Eunuchoids. H. Bültemann.—p. 429.
Islands of Squamous Epithelium in Cervical Mucous Membrane. H. Hinselmann.—p. 442.
Prognosis of Sarcoma of Genital Tract. H. Goldschmidt and J. Koerner.—p. 443.
Primary Carcinomas of Vulva and Vagina. H. Seidemann.—p. 452.

Prescribing Ergot.—In general, Asch prefers to prescribe ergot rather than any of its extracts or preparations. The disadvantage that it loses in strength with age may be overcome by increasing the dose according to the number of months since harvest. The further difficulty that nausea and vomiting often follow its administration by mouth he overcomes by giving it baked in cakes. Taken in this manner, its effectiveness is not diminished, but nausea and vomiting are absent. The cakes may be made at home: 10 Gm. of freshly ground ergot is incorporated with sufficient flour and other ingredients to make twenty small cakes. Each cake contains 0.5 Gm. of ergot. In late winter and early summer the quantity of ergot to the same amount of dough should be doubled.

Monatsschr. f. Kinderheilkunde, Leipzig

36: 97-192 (July) 1927

*Combating Itching in Children. B. Bornikoel.—p. 97.
*Almond Whey Milk in Infantile Diarrheas. A. Wittenberg.—p. 124.
Congenital Weakness of Muscles and Ligaments. H. Temming.—p. 130.
*"Lightning" Convulsions. H. Lehmkuhl.—p. 138.
Physiology of Gastric Juice Secretion in Infants. O. Corsdress.—p. 150.

Combating Itching in Skin Diseases in Children.—In severe cases, the part should be bandaged and quieting remedies,

such as chloral hydrate, should be administered. Amyl nitrite, in large doses, is combined with treatment of the underlying dermatosis in recent and chronic infantile eczema and in dermatoses of nervous origin; calcium preparations are good in strophulus. Hamamelis ointment seemed to have the greatest influence, especially in combination with ethyl aminobenzoate and procaine hydrochloride. In chronic forms and also in eczema of nervous origin coal tar was effective; in strophulus, sulphur baths brought about retrogression, especially of the itching. In dermatoses of nervous origin and in strophulus, the child's environment should be changed, with attention to hygienic and psychic conditions.

Almond Milk-Whey as Temporary Diet in Diarrhea in Infancy.—Almond milk-whey mixture is a casein-free milk made from almond milk, calcium whey, maize flour and sugar, a liter of which furnishes about 600 calories. The calcium whey is prepared as follows: one liter of milk is boiled with 4 Gm. of calcium lactate and the casein thus precipitated out. The whey, separated by means of a filter cloth, contains 0.3 per cent of albumin and all the salts and sugar of the milk. Forty grams of almonds are allowed to stand in lukewarm water from twelve to twenty-four hours, are then peeled and finely ground in an almond mill. With a gradual addition of water they are further triturated in a bowl until a fourth of a liter has been poured in, when the mass is pressed through a linen bag. To the almond milk thus obtained an equal amount of calcium whey is added, a tablespoon of maize or rice flour (= 7½ Gm. or 3 per cent) and 2½ lumps of sugar (5 per cent) and the mixture boiled. The finished almond milk contains 1.65 per cent of albumin, 6.6 per cent of sugar and 2.95 per cent of fat. It has almost the same composition as breast milk. It may be used to advantage as a temporary diet in mild and severe dyspepsia. In the cases described, special diet was not necessary. The same diet, with which there had been diarrhea, was well digested after the almond milk period, which was characterized by a change of stool reaction and disappearance of the diarrhea. Prolonged starving of a child suffering from diarrhea should be avoided.

"Lightning" Convulsions.—Lightning convulsions appeared in most cases reported in the literature for the first time between 4 and 6 months of age. A sudden lightning-like convulsion goes through the whole body, the head is bent forward on the chest, and the legs are drawn up. After some time the convulsion recurs. Unlike salaam convulsions, they do not take place in series. The children, who, before the convulsion, had developed normally in mind and body, thereafter gave evidence of arrest and also of retrogression mentally and physically. With few exceptions, they became idiots; they no longer laughed or looked at things and they forgot how to sit up. Frequently, there was a familial taint. The etiology is unexplained. Bromides and phenobarbital were without effect. Lehmkuhl reports two cases.

Münchener med. Wochenschrift, Munich

74: 1353-1398 (Aug. 12) 1927

Energy Consumption, Heart Performance and Recovery Quotient in Training. J. Kaup and A. Grosse.—p. 1353.
Active Immunization of a Community to Scarlet Fever and Diphtheria. B. de Rudder.—p. 1357.
New Concentrated Scarlet Fever Serum. K. Ochsenius.—p. 1359.
Peculiarities of Spinal Fluid in Infants. A. Mader.—p. 1361.
*"Discharge Edema" of Lungs After Relief of Tracheal Stenosis. R. Nissen.—p. 1362.
*Protracted Lead Poisoning. A. Seitz.—p. 1364.
Cobra Venom and Action of Light. Much et al.—p. 1365.
Determination of Specific Weight of Urine. H. Schulten.—p. 1366.
Feeding Milk in Childhood. J. Schoedel.—p. 1367.
*Accident Not Cause of Spontaneous Gangrene of Forearm. Oberndorfer.—p. 1369.
Morphinism. C. Weiss.—p. 1371.
*Aman's New Obstetric Case. F. Binz.—p. 1372.
Bulbus Duodeni in Roentgenogram. H. Sielmann.—p. 1373.
Heel Pain. P. Pitzen.—p. 1376.
Prophylactic Injection of Tetanus Antiserum in Open Wounds. A. Krecke.—p. 1377.

"Discharge Edema" of Lungs After Relief of Tracheal Stenosis.—In four cases, pulmonary edema was observed after relief of long-standing tracheal stenosis and in two cases death occurred. The physical conditions of this "discharge edema" are discussed. Many bronchopneumonias after strumectomy develop from similar edema centers.

Unusually Protracted Lead Poisoning.—A physician, his wife and three members of his household, suffered from chronic lead poisoning, with pain and paralysis, for sixteen years. It was due to drinking water which had a high lead content. Ten years after onset of these symptoms, the urine contained, at one examination, 8 mg., at another 36 mg. of lead. In only one case was the blue line characteristic of plumbism present. Spontaneous remissions occurred. Iodine medication at a spa afforded some relief.

Accident Suspected as Cause of Spontaneous Gangrene of Forearm.—A young girl scalded her right hand with hot whey, but was able to work until a week later, when she developed fever (39.5 C.). She was unconscious for two days. Subjective and other objective symptoms were absent, until the eighth day, when the right forearm became painful and itchy; the fingers were numb, the radial pulse scarcely palpable. One month after the accidental burning, the gangrenous hand with the forearm to within 8 cm. of the elbow was amputated. According to the views of medical authorities, a relation between the burning of the fingers and the gangrene of the forearm must be absolutely excluded.

Aman's New Obstetric Case.—A metal case with asbestos cover contains two metal cylinders, the larger one to hold quite an extensive instrumentarium and, when empty, to serve as an irrigator. A second cylinder somewhat smaller and supported above the first by means of a wire frame is packed with the operator's gown, towels, tampons, compresses and gloves. The whole apparatus is then enclosed in a sailcloth cover in the side pockets of which are kept drugs, rubber sheets, etc. The case is kept packed. When a call is received, the outer metal box is filled with water up to about 10 cm. and placed over a flame. While the doctor makes his own preparations, the instruments are being sterilized; on the journey they cool and are ready for use.

Strahlentherapie, Berlin

26: 425-656, 1927. Partial Index

Biologic Effect of Roentgen Ray. M. Schubert.—p. 425.
Erythema Action of Various Qualities of Roentgen Rays. A. Determann et al.—p. 472.
Roentgenotherapy of Acute Inflammations. C. Fried.—p. 484.
Radium Therapy of Cancer in Paris Radium Institute. A. Lacassagne.—p. 507.
*Light Therapy of Skin Lesions Caused by Roentgen Ray and Radium. A. Reyn.—p. 544.
*Roentgenotherapy of Tuberculosis of Female Genitalia. E. H. Zweifel.—p. 564.
Increased Penetrability of Skin for Short Light Waves and Ultraviolet Rays. W. E. Pauli.—p. 577.
Variations in Serum Albumin. E. Schneider.—p. 586.
Changes in Blood Proteins After Roentgen Irradiation. A. Behrens.—p. 602.
Roentgen-Ray Experiments on Frog Hearts. L. Haberlandt and R. Sandera.—p. 607.
Roentgen-Ray Sarcoma. S. Pförringer.—p. 610.
Dosage Standards. M. Jona.—p. 614.
Report of Moscow Institute for Skin Tuberculosis. M. M. Bremener.—p. 638.

Light Therapy for Skin Lesions Caused by Roentgen Rays and Radium.—In a considerable number of cases of ulceration, atrophy and other changes of the skin induced by irradiation, Reyn succeeded in effecting a cure by using a concentrated light from a carbon arc (Finsen method). He insists that ultraviolet rays should not be used. In several cases he has seen bad results from their use. Many years have elapsed since the treatment of the cases reported, hence the results may be taken as being permanent.

Roentgen-Ray Therapy in Tuberculosis of Female Adnexa.—Zweifel holds that the results accruing from the use of the roentgen ray in cases of adnexa tuberculosis in women are not only definitely superior to radical operation but far less dangerous, besides yielding much better results. If low dosages are used, neither menstruation nor ovulation will be effected. Other conservative measures should not be neglected.

Wiener klin. Wochenschrift, Vienna

40: 1045-1068 (Aug. 18) 1927

Physiology of Puerperium. L. Kraul.—p. 1045.
*Cyanosis in New-Born. J. Sahler.—p. 1049.
Modified Antivirus. M. Eisler and H. Lehndorff.—p. 1050.
*Treatment of Tuberculosis of Hip-Joint. K. Durban.—p. 1051.
Roentgen-Ray Treatment of Postoperative Pulmonary Disturbances. K. Glas.—p. 1054.
Motor Disturbances in Chronic Lethargic Encephalitis. I. A. Brodsky.—p. 1055.
*Erythrocyte Count in Human Blood. W. Komocki.—p. 1057.
Tissue-Fluid Reaction of Organism in Gastric Disease. R. Balint.—p. 1058.
Serologic Diagnosis of Infectious Diseases. V. Russ.—p. 1058.
Symptoms in Diseases of Pleura. J. Sorgo.—p. 1059.
Indications for Dextrose Solution. K. Stejskal.—p. 1062.
Basis of Organotherapy. H. H. Meyer. Supplement.—p. 1.
Therapeutic Influence of Reticulo-Endothelial System. P. Saxl. Supplement.—p. 5.
Focal Reactions; Therapeutic Significance. J. Donath.—p. 9.

Cyanosis in New-Born.—In Sahler's case, signs of intrauterine asphyxia were not present during delivery, and the child began to breathe soon after birth. Ten minutes later, the face and neck were dark blue, while the skin of the upper part of the body was normal. The air passages were free and heart action was regular. The condition persisted. Ten hours after birth roentgenograms showed considerable widening of the vessel shadow corresponding to the superior vena cava or perhaps the anonyma. Twenty-four hours later the cyanosis had decreased and, along with it, the width of the vessel shadow. On the third day after birth, both had disappeared. In this case there was not mixed cyanosis, but the blueness limited to the face and neck indicates a circulatory disturbance, which must be located in the neighborhood of the opening of the superior vena cava into the right ventricle, but which did not influence the discharge of the inferior vena cava into the right ventricle. Taking into account the relative position of the vena cava openings in the right ventricle, then a narrowed opening at the mouth of the superior vena cava may be supposed. Such an abnormal pressure may be explained by assuming an atonic condition through nerve disturbance and, hence, abnormal filling of the left auricle with blood. Or it may be that the muscle bundles lying at the base of the tuberculum loweri projected too far, because of an abnormal innervation, made difficult the discharge of blood from the upper vena cava and hence gave rise to a venous stasis in the region of the face and neck.

Treatment of Tuberculosis of Hip-Joint.—Durban undertook the treatment of several cases of tuberculous coxitis, recent as well as old, by extension in a flexed position. He succeeded in avoiding subluxation in one recent case and in reducing the existing luxation in an older case. The procedure consists of a slow, staged reduction with flexion, abduction and external rotation always with regard for the condition of the tuberculous process at the time. Extension follows the straight line obtained with tension on the femoral axis, and as this, after flexion and abduction, changes its direction, that of the extension changes also. After the overcoming of the general obstacles to reduction, comes, as the decisive feature, the gradual changing of the flexion into the desired, function-favoring extended position; however, this is only after one is convinced of the joint contact, and when it may be supposed that the tuberculous process is included in the involution.

Erythrocyte Count in Human Blood.—In healthy, well built male inhabitants of Warsaw, between 20 and 40 years of age, with no hereditary taint, Komocki found in 1 mm. of blood from 5,500,000 to 6,000,000 erythrocytes; in females, from 5,000,000 to 6,000,000. These high values the author attributes to the fact that he examined only perfectly healthy individuals. In delicate, slightly anemic persons, the erythrocyte count was much lower than in the normal, but the hemoglobin content was higher than the minimum for a healthy man. One cannot speak of a fixed erythrocyte count, since deviations in the normal amount to 1,000,000; moreover, a single individual showed in successive examinations a difference of 200,000. Whether this is due to lack of precision in the technic or the unequal composition of the blood drop is not evident. Both factors might be responsible.

Acta Psychiatrica et Neurologica, Copenhagen

2: 1-86, 1927

*New Treatment of Infantile Paralysis. H. Bordier.—p. 1.
Problem of Suppression. Emanuel af Geijerstam.—p. 5.
*Menière's Disease. A. Thornval.—p. 39. In English.
Chemical Basis for Boltz' Test of Cerebrospinal Fluid. G. Blix and E. Backlin.—p. 82. In English.

General Principles, Technic and Results in New Treatment of Infantile Paralysis.—The principal factor in Bordier's treatment of anterior poliomyelitis is radiotherapy of the affected segment or segments of the spinal cord, begun as soon as possible after the febrile period. The dose is about 200 R units (French?) in children under 3 years of age, gradually increased to 1,000 R units in adults, screened through 6 mm. of aluminum. A series of three irradiations is given, followed by an interval of twenty-five days; two or three series are thus administered, according to the gravity of the case. Secondly, diathermy is administered to promote nutrition of all the paralyzed parts. It is applied from the beginning independently of the irradiations and continued till normal temperature returns. Finally, a low voltage current of the desired frequency and wave form is used to assist in restoring paralyzed or atrophied muscles to normal; it is continued over a long period. He finds that this combined treatment considerably improves the prognosis in the gravest forms of anterior poliomyelitis and is effective in most cases of moderate gravity.

Menière's Disease.—Thornval describes the characteristic features of Menière's disease as observed in thirty-seven patients. He is inclined to advocate hygienic and dietetic treatment. Administration of bromide and phenobarbital proved most beneficial, and he has seen good improvement in six out of seven patients treated with parathyroid tablets and calcium. Caution is urged in the use of the ear-douche and massage. He considers surgical intervention the last resort; the best results seem to follow destruction of the vestibular otolith apparatus.

Acta Tuberculosea Scandinavica, Copenhagen

3: 1-60, 1927

*Erythema Nodosum and Pulmonary Tuberculosis. C. Hambro.—p. 1. In English.
Reactions in Pulmonary Tuberculosis. V. Seppänen.—p. 33.
"Sanocrysin" Problems. P. Kistrup and K. Secher.—pp. 41 and 51. In English.

Erythema Nodosum and Pulmonary Tuberculosis.—In Hambro's material of 1,000 cases a history of erythema nodosum was absent in the 256 nontuberculous cases. Of the 744 with known or suspected tuberculosis in the lungs or pleura, sixty-two had had erythema nodosum. In forty-three of these there was tuberculosis in the family. He considers erythema nodosum of tuberculous nature, often the first response of the organism to the tuberculous infection. A relation between erythema nodosum and pleurisy seems to him probable. In twenty-seven of his cases pleurisy followed the exanthem. He believes patients should be kept under observation for a year after erythema nodosum and he does not allow them to resume work for several months.

Bibliotek for Læger, Copenhagen

119: 627-682 (Aug.) 1927

*Nephelometric Measurement of Neutral Fat-Cholesterin Fraction in Blood. H. Heckscher.—p. 627.
Technic in Renal Operations. T. Rovsing.—p. 666.
Light and Experimental Rickets. P. Schultzer.—p. 673.

Nephelometric Measurement of Neutral Fat-Cholesterol Fraction in the Blood by Bing and Heckscher's Method.—Suspensions of pure cholesterol were found by Heckscher to be unsuitable for nephelometric measurement by Bing and Heckscher's method. Olein-cholesterol mixtures with more than 10 per cent of olein can, he says, be determined quantitatively. Variations between 10 and 20 degrees in temperature were immaterial. Changes in nephelometric values did not occur between fifteen and forty-five minutes after the suspension was prepared. Comparative examination by the Bang and by the Bing and Heckscher methods gave conformable results. The technic of the latter method is described.